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THE JOURNAL OF THE AMERICAN MEDICAL PROFESSION

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The Present Status of the Control of Poliomyelitis*

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BROOKLYN is passing through an epidemic of poliomyelitis which, although it does not approach the severe outbreak of 1916, is still the largest since that year. Interest in poliomyelitis wanes in inter-epidemic years, but at the present time the people of Brooklyn and greater New York are greatly interested in this disease. It seems to me that this is a good time for us in the medical profession to review the problem and summarize what we know and have learned about the disease with reference to the epidemiology, clinical manifestations, and various therapeutic measures that have been and are being employed.

There are a number of features concerning which we are as yet totally ignorant, but much has been learned, particularly concerning the epidemiology and the clinical manifestations of the disease, since the work of Heine, Caverly and Wickmann and the later work of Flexner, Lewis, Amoss, Peabody, Dochez and Draper.

The etiologic agent of poliomyelitis is as well known as that of any virus disease. In fact, since the disease can be so faithfully reproduced in the experimental animal I believe that we have even greater assurance concerning the causative agent than we have in certain other diseases. The experimental disease has been produced by intraperitoneal, subcutaneous, intramuscular, intracerebral and intranasal instillations of a drop or two of the active virus. We have found that the experimental animal (*Macacus rhesus*) passes through an episode quite analogous to the preparalytic stage of the human form of the disease. Not only have we been able to produce the experimental disease, but we are able, chiefly by means of the virus neutralization test, to carry out immunological studies comparable in significance if not in scope with those in such a common disease as diphtheria. The virus can be destroyed by heat and chemicals like other infectious agents. We can produce an active immunity in the experimental animal and animals have been protected by the use of immune serum so produced.

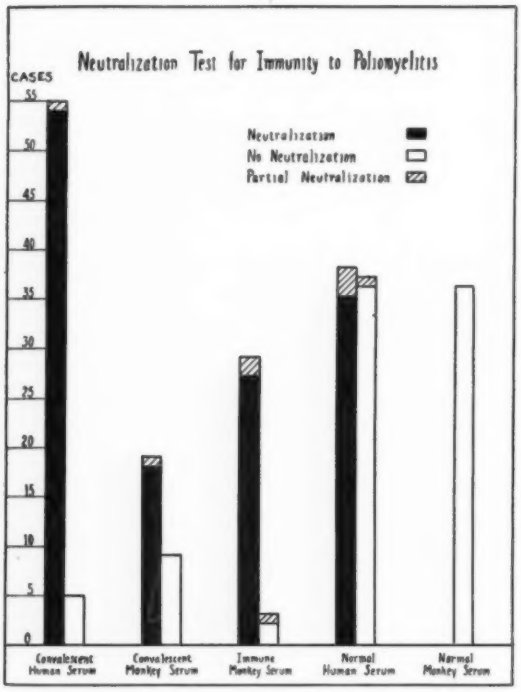
The incubation period, indicated from studies of secondary cases, is seven to fourteen days.

A study of the epidemiology of poliomyelitis reveals close analogies between this disease and that of the other contact diseases of childhood such as

* Read before the Brooklyn Pediatric Society, September 23, 1931.

measles and diphtheria. The comparison with diphtheria is an apt one. Poliomyelitis and diphtheria are unlike measles in that in the latter disease there is an equal susceptibility in the general population. In the case of diphtheria and poliomyelitis the susceptibility of individuals varies. This is indicated, of course, by the incidence of the two diseases being,

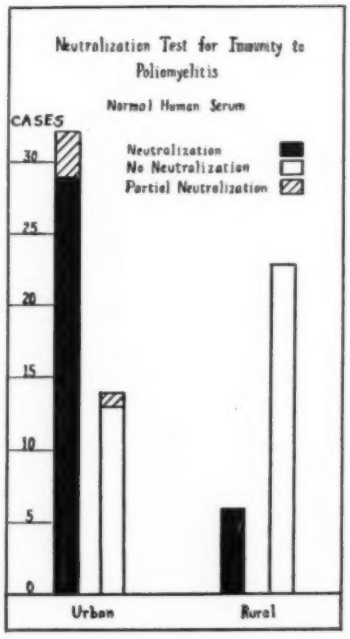
Chart 1



roughly, one in ten for diphtheria and one or two per thousand population for poliomyelitis.

A number of features have suggested to students of epidemiology a mode of spread other than contact. The seasonal distribution seems to differ from that of other contact diseases and the fact that a few of the outbreaks have been in rural communities has fortified this impression. It will be remembered that whooping cough, whose transmissibility by contact is now well established, was for a time open to the same question. A careful study of the statistical data, over an adequate period of time, reveals the fact that its urban-rural characteristics are, in reality, not unlike those of other contact diseases. That is to say, the incidence of the disease over a period of years bears a direct relation to concentration of population. A number of studies in the past few years have served to point out and fortify the notion that poliomyelitis, like diphtheria and measles, is primarily a contact disease. By taking a cross section of the population at large, including individuals from urban and rural communities, from north and south and from all age groups, a series of neutralization tests carried out by Dr. Aycock and myself discloses a complete correspondence with similar studies in diphtheria. The accompanying graphs give the results of these studies. (Graphs 1, 2, and 3). We found first that almost nine-tenths of urban adults were immune to the disease; and that immunity was less prevalent in the younger age groups where, from a study of the incidence of poliomyelitis, the largest number of cases are found to occur. We found, furthermore, that this same type of curve pertains to the rural population but that rural adults are less likely to be immune than urban adults. It was also found that adults from an urban southern community were just as immune as those living in temperate climates. As in diphtheria we found that there is passive transfer of immunity from the mother to newborn. It is true, of course, that the total number of individuals tested is relatively small, but when we compare these findings with similar results obtained by Zingher and Godfrey on a large scale in diphheria and with what we already know concerning the incidence, age distribution and the distribution with relation to concentration of population, these small figures begin to take on greater significance. In diphtheria the detection of carriers is a relatively easy matter. The carrier rate in diphtheria has been determined many times both for urban and rural communities and in both the north and the south. This rate in diphtheria has been found to be about one and one-half percent. It has been calculated that such a rate is sufficient to immunize nine-tenths of the urban population by the time adult life is reached. This has actually been found to be the case by employing the Schick test on many thousands of individuals. Since an equally high rate of immunity is found in a disease of such low incidence as poliomyelitis and the fact that the virus has been recovered from the nose and throat of patients and some contacts, and since, as has already been suggested, the experimental disease can be produced by the instillation of several drops of the virus into the nose of the animal, it seems very evident that the mechanisms through which this widespread immunization occurs must be the same as in the case of diphtheria,—namely, through widespread exposure to the virus of poliomyelitis. It is

Chart 2

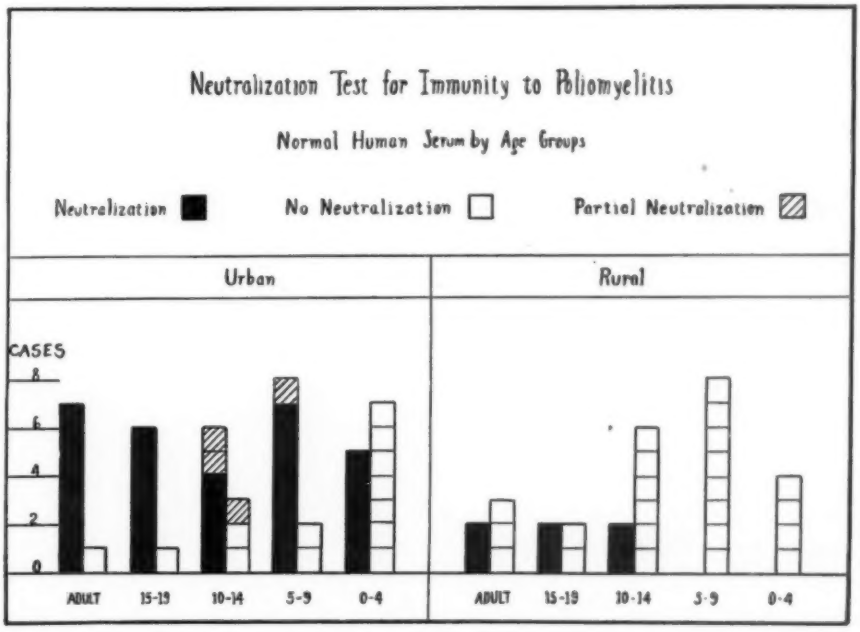


unfortunate, of course, that we have no practical method for the detection of carriers in poliomyelitis and that we have no practical means for detecting susceptibility to the disease. Our belief, therefore, that the disease is a contact disease, the virus of which is spread through the agency of carriers, is

based partly on indirect evidence, but from the epidemiologic and other studies enumerated above, we believe this conception of the epidemiology of the disease is a sound one. In view of this concept of the epidemiology of poliomyelitis, the difficulties of any attempt to limit the spread of the virus are apparent. It must be obvious that there can be no geal or cortical involvement.

In the past few years in Massachusetts we have become increasingly doubtful of the occurrence of large numbers of such mild abortive forms of the disease at the time of an epidemic. The opportunity to determine whether or not large numbers of such illnesses do occur in the time of an outbreak came

Chart 3



hard and fast rules of conduct in the event of an outbreak. The diagnosis in the early or preparalytic stage of the disease and isolation of such cases seems to be the only procedure on the basis of our information at the present time. The outlook for the control of carriers who, it appears, must greatly outnumber cases, is not, because of difficulties in their recognition, a very hopeful one.

The question has been raised whether immunity may not be due to the relatively widespread occurrence of mild or abortive forms of the disease occurring in the course of an outbreak of poliomyelitis. Since Wickmann's first description of the abortive form the feeling has become almost universal that much of the immunity is a result of mild or abortive forms of the illness. Wickmann's concept of abortive poliomyelitis included all illness occurring at the time of an outbreak of poliomyelitis in which the outcome did not result in paralysis at all, or only to a mild degree. Since Wickmann's time, however, particularly in the past few years, we have come to recognize different phases of the disease. It is well known, for example, that a certain proportion of the cases never terminate in paralysis. We have, furthermore, come to realize that when seen in the preparalytic stage of the disease it is quite impossible to differentiate paralytic from non-paralytic forms. It is becoming increasingly evident that an unknown number of cases do not go beyond the systemic invasions, the brain and cord apparently escaping involvement. The term "abortive poliomyelitis" must therefore be limited to the latter group of patients, or to those individuals who have a systemic response to the infection without menin-

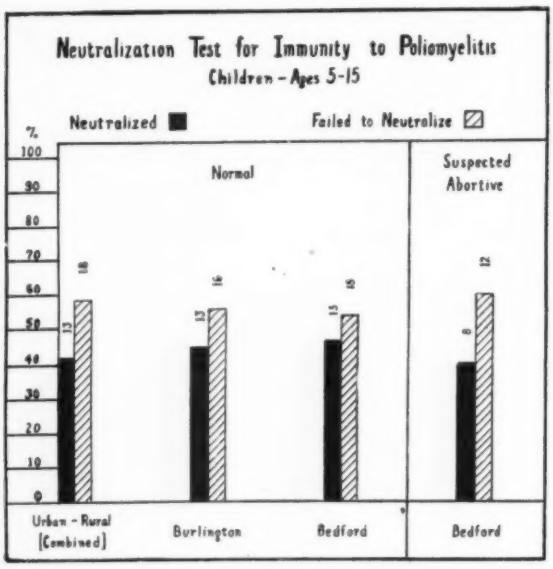
to me* last year in Massachusetts. In the small town of Bedford (population 1700), some twenty miles from Boston, there occurred five frank cases of the disease. A house to house canvas revealed that a large number of mild upsets with moderate fever and gastro-intestinal disturbances had occurred within six to eight weeks of the appearance of the first case, giving, roughly, a ratio of ten of such cases to one of the frank disease. Since school was in session and all of those stricken were school children it was assumed that a large proportion of the children at that school had been exposed to the virus. It seemed possible that a large proportion of these illnesses might have been abortive forms of the disease. In order to determine whether or not these were really abortive poliomyelitis, a neutralization test was done on about twenty of these children. A similar test was carried out on a group of twenty-eight children of the same ages and from the same school who had not shown any signs of illness during that period of time, and a group of twenty-nine children from an adjacent town where there was no poliomyelitis were tested in a similar manner. The results of the immunization tests in these three groups of children proved to be identical. The expectation of a high rate of immunity in those having passed through the mild illness did not materialize. These findings are shown in the accompanying chart (on next page).

Since these bloods were taken about five months after the occurrence of illness, any immunity which might have developed as a result of such an in-

* In press: Jour. Experimental Biology and Medicine.

fection should have been detected at the time of the testing. From these tests it therefore appears that the widespread immunization of a population does not take place entirely at the time of an outbreak but rather in a more or less uniform manner throughout the year. This rate may, of course, vary with variations in the presence of the virus in a community.

Chart 4



Although infantile paralysis is endemic in Massachusetts it is yet not an unusual experience for those of us who see the disease in all parts of the state to meet physicians from time to time who either have not seen a case of infantile paralysis at all or have not seen the disease in the preparalytic stage. It is a little difficult to explain this unless we remember that the incidence of infantile paralysis is low when compared with other diseases, the incidence, even in severe outbreaks, seldom exceeding two per thousand population.

The history and the clinical manifestations in the preparalytic stage of the disease are so constant and uniform that we feel we must now add this disease to our list of recognizable syndromes. The onset is usually abrupt. The child is taken ill suddenly with headache, moderate fever, mild gastro-intestinal upset, vomiting once or twice. In other seasons of the year these symptoms might very well be overlooked by the average parent. In the late summer and fall, however, these mild symptoms may be, and frequently are, the first signs of the illness. On physical examination, the child is seen to be markedly prostrated—much more so than one would expect with a moderate fever (101° to 103°). The child is flushed, shows a tremor of the hands, a *tache cérébrale* and a moderately reddened throat. Although the parents may state that the child is drowsy and wishes to be left alone, it is noted that in the course of the examination the patient is unusually alert and very apprehensive. The deep reflexes are usually present and at times are exaggerated. The outstanding positive physical finding that points to preparalytic poliomyelitis is the stiff neck and back present in nearly all of these patients. The attitude assumed by the patient is rather characteristic. It is one of protection against flexion of the neck or back. The rigidity of the neck and back is not usually as marked as that found in meningitis and on occasions it is only detected on careful examination. On attempting to flex the head on the chest a resistance is met so that it is impossible to get the chin in contact with the chest wall without causing a great deal of pain. When the child is asked to sit up the back and neck are held rigid and the child assumes a rather erect, proud position, supporting the trunk with the hands extended backward. A request for the patient to bend forward and place his head between his knees elicites the answer "I can't" and any attempt forcibly to flex the back and head results in considerable pain.

The diagnosis of preparalytic poliomyelitis can frequently be made with reasonable certainty on the history and physical findings thus far obtained. A useful and usually confirmatory step is examination of the spinal fluid. The spinal fluid in poliomyelitis is fairly characteristic. The pressure is usually increased above 150 millimeters of water pressure. The fluid is ground glass in appearance to transmitted light. The cells are usually increased and they range from 20 to 2000, the average, however, being in the neighborhood of 300 cells. The type of cells present seems to be of no diagnostic importance, there being a varying proportion of polymorphonuclear and lymphocytes. The globulin is very constantly increased and the sugar is present.

The history, physical and spinal fluid findings described above are sufficient, in most instances, to establish the diagnosis of preparalytic poliomyelitis.

Convalescent serum therapy in poliomyelitis is not a new procedure. Netter was the first to employ such serum in the treatment of cases in the acute stage of the disease irrespective of the existence of paralysis. Other serums have since been used, the anti-virus horse serum of Petitt and streptococcus horse serum of Rosenow and more recent anti-virus horse serum produced abroad by Fairbrother and in this country by Park, Banzhoff and Weyer, and, in view of our findings of several years ago of a high rate of immunity in urban adults, normal human serum.

There are now many reports concerning the clinical use of convalescent and other serums administered in various ways and in varying doses. While these reports are almost uniformly favorable, none contain the element of experimental control, such as, for example, the treatment of alternate cases. Furthermore, few of the reports include sufficient numbers of cases to give them any statistical validity. In the absence of a hyper-immune anti-virus serum, convalescent serum, and, it appears, normal urban adult serum, have from both a theoretical and an experimental point of view, been the serums of choice.

In Massachusetts and Vermont we have in the past five years administered human convalescent serum to a large number of early or preparalytic cases of poliomyelitis. The results of the analysis of our serum treated cases when compared with a similar analyzed group, seen too late for treatment, regularly favored convalescent serum judged both from the difference in the case fatality rates and the amount of paralysis in the groups compared. The accompanying table shows the results of our analysis over a period of several years. It will be seen that not only was the death rate lower and the average amount of paralysis in the treated group much lower,

COMPARISON OF TREATED AND UNTREATED CASES IN MASS., 1927, 1928 AND 1930, AND IN MAINE, 1930

Year		Cases	Deaths	Case Fatality Rate	No. Muscle Exam.	Total	Good	Fair	Poor	Trace	Gone
1927	All cases	1189	166	13.9							
Mass.	Untreated	1083	165	15.2	482	66.6	18.7	13.0	17.7	7.5	6.7
	Treated	106	1	0.9	106	19.0	8.6	4.2	4.7	0.9	0.6
1928	All cases	431	62	14.4							
Mass.	Untreated	297	55	18.5	99	46.8	15.9	10.4	12.7	4.5	3.3
	Treated	116	7	6.0	107	12.9	4.7	2.7	3.4	1.2	0.8
1930	All cases	504	33	6.5							
Mass.	Untreated	392	29	7.4	184	65.6	16.0	12.9	18.2	10.8	7.7
	Treated	75	0	0	40	21.4	6.0	5.4	4.7	3.1	2.2
1930	All cases	166	28	16.9							
Maine	Untreated	117	27	23.1	49	80.6	18.2	16.5	20.2	13.2	12.5
	Treated*	49	1	2.0	26	53.5	12.3	10.6	13.7	7.9	9.0

*a few cases included in this group were treated after the appearance of paralysis.

but that only a small number of the treated cases fell into the more severely paralyzed group, indicated on the table as trace and gone. In this analysis the uniformity of this difference between treated and untreated cases in different years and outbreaks of different intensity is outstanding.

We have repeatedly pointed out, however, that our studies did not constitute a controlled experiment. In the years of more or less average occurrence it has been possible to supply the need for serum to all cases seen in the preparalytic stage of the disease. We have felt that it remained for an emergency such as we are passing through this year in New York, Connecticut and Massachusetts, when there could hardly be sufficient serum to treat all cases seen in the preparalytic stage, to determine with some precision the difference between the outcome in cases treated with serum and untreated cases in the same outbreak. It is hoped that at the end of the present outbreak we shall have accumulated sufficient evidence properly to evaluate the serum therapy of poliomyelitis.

The Nature of Viruses

During the week two pronouncements have been made on the biological nature of viruses. Dr. H. H. Dale introduced from the chair a discussion on this subject at the Physiological Section of the British Association, and Prof. James McIntosh commended it to the notice of students beginning their course at the Middlesex Hospital. The virus is almost as infinitely small as the solar system is infinitely large; the smallest known virus is, in fact, actually smaller than a molecule of hæmoglobin. Nevertheless, as Prof. McIntosh insisted, it could still contain a score or more of protein molecules, and its only similarity to a ferment or enzyme is that both can act in minute quantities. A ferment of enzyme cannot, he added, increase or multiply. Dr. Dale, too, remarked that the dimensions assigned to the units of some viruses might well make one hesitate to credit them with the power of active self-multiplication. Experience however provides no analogy for the growth of such a substance by self-synthesis from the constituents of a lifeless medium. He had little sympathy with the suggestion that the presence of the virus in a cell in some way constrains the metabolism of the cell to produce more; and he closely argued the drawbacks to this view, adding a new one to the effect that it would be difficult to imagine that a virus like rabies could be permanently excluded from this country, as it has been, if it had an autogenous origin. In answering the question, what do we mean by a virus? Dr. Dale admitted that definition was more difficult than a few years ago, when it was possible to accept three cardinal properties—viz., invisibility by ordinary microscopical methods, non-retention by a filter fine enough to prevent the passage of all visible bacteria, and inability to propagate itself except in the presence of the cells which it infects. The failure of such a definition to effect a sharp or stable demarcation is, he said, progressive. To be consistent we must include among viruses, on the one hand, the filtrable agents transmitting certain tumors, and, on the other hand, the agents of transmissible lysis known as bacteriophages. Microscopic visibility is obviously a loose term; those who hold by it are tempted either to exclude an agent from the group of viruses as soon as the microscope can demonstrate it, or to regard the minute bodies which are seen or photographed as not really the infective agent but products of a perverted metabolism which its presence engenders.

Accepting this inherent difficulty in defining logically the group of viruses, Dr. Dale set out his own position in the following way.

"The viruses," he said, "seem to form a series; but we do not know whether the series is real and continuous, or whether it is formed merely by the accidental association, through a certain similarity in effects, and through common characteristics of a largely negative kind, of agents of at least two fundamentally different kinds. If we approach the series from one end, and watch the successive conquests of microscopical technique; or if we consider the phenomena of immunity over the whole series; we are tempted to assume that all the viruses will ultimately be revealed as independent organisms. If we approach from the other end, or consider analogies from other examples of a transmissible alteration of metabolism, we may be tempted to doubt the significance of the evidence provided by the microscope, and to conclude that all viruses are unorganized, autogenous, toxic principles. If we take the cautious attitude of supposing that both are right, and that viruses belonging to both these radically different types exist, where are we going to draw the line? Is the test to be one of unit dimension? If so, what is the lower limit of the size of an organism? Are we to suppose that inclusion bodies can only be produced by viruses which are independent organisms? And if so, does this conclusion also apply to the "X" bodies associated with the infection of plant cells by certain viruses? If we try to form an estimate of the lower limit of size compatible with organization, we should remember that particles which we measure by filters of known porosity, or by microphotographs, need not be assumed to represent the virus organisms in an actively vegetative condition. They may well be minute structures, adapted to preserve the virus during transmission to cells in which it can resume vegetative life . . . . Workers in the cytology of genetics, accustomed to picturing a complex of potentialities as somehow packed into the compass of a gene, may find less difficulty, than does the bacteriologist, in attributing sufficient organization, for true self-reproduction, even to particles still far beyond the range of detection by the microscope."

Prof. McIntosh told the Middlesex students that the science of bacteriology has led to the control of most infective diseases. Dr. Dale told the British Association that the near future seems likely to give us an epoch of not less important discovery concerning the viruses. No one familiar with the work of Rous and Murphy and its later developments can, he thinks, doubt that in the advance knowledge concerning the nature of the viruses in general lies the brightest hope of finding a clue to the secret of the malignant tumors. Even if no new Pasteur should arise to reconcile scattered and conflicting indications in an order yet unseen, there is prospect of advance along a wide front common to many workers in many countries.—*The Lancet*, Oct. 3, 1931.

Pruritus Ani

Many cases are due to ringworm infection.

Migraine*

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Brooklyn, N. Y.

THE syndrome known as migraine has been the subject of conjecture and study for centuries. Holbein's picture representing migraine as an attack upon a man's head by devils with spears, hammers, bells and various noisy implements expresses well the agonies suffered by a person in a typical attack. Being a relatively common condition (Balyeat has estimated that 7% of the population has migraine and that 4% are actual sufferers) and occurring as a rule in more intelligent individuals (Balyeat finding that 75% of sufferers have an intelligence quotient above normal) much opportunity has been given for careful observation of this scourge, and yet the opinions regarding its etiology and treatment have differed widely. Its resemblance to epilepsy both in its hereditary aspects and in its onset and course, has long been recognized, and this has led to the feeling on the part of some observers that it is incurable. Some have held it to be due to a functional derangement of the brain, caused by mental disturbances or fatigue, others have attempted its explanation on the basis of brain lesions, such as endarteritis, syphilis or tumors. And yet in typical migraine no brain lesions have been found at autopsy. Its relation to infection of the nasal accessory sinuses and to dental infections has been emphasized as indicating its relation to pressure on nerve endings. "Intestinal toxemia", the favorite scapegoat of the past, has also been blamed for migraine. The endocrine system has been pointed out as a cause, the frequent onset of attacks at puberty and the well-known relation of attacks to the menstrual epoch being held as proof of such a relationship. Studies of the sella turcica, showing apparently a widening in this region during an attack, have been offered as evidence of the pituitary as a cause of the syndrome. The thyroid has also been suspected, and the relief afforded at times during an attack by the administration of adrenal or pituitary extracts has apparently afforded additional proof of an endocrine etiology. The accompanying gastrointestinal symptoms have always focussed attention upon the gastrointestinal tract as a cause of the condition, and many patients have been subjected to futile operations in the hope of relief, especially when a gastroenterological study revealed real or suspected pathology. "Bilious attacks" having been the popular name for migraine for generations, the gall-bladder was singled out for attack, and many patients had cholecystectomy performed with no effect on the migraine. In a series of ninety private patients with migraine studied by me, thirty-three or 37% had had operations without relief (see Table 1).

In view of the fact that sufferers from migraine have so frequently attributed their attacks to dietetic indiscretions, it is rather surprising that clinicians have for so long failed to realize that this observation was not mere idle guessing, but based on actual facts, and that it was not necessary to look for some complicated mechanism behind the attacks instead of determining just which foods happened to be a cause and whether they were the only cause. Owing to the incidence of migraine in my own family and the frequency of its occurrence in my gastroenterologic practice, I have long been interested in migraine and for at least fifteen years have been convinced that it is practically always allergic in origin.

TABLE 1. Previous Operations in 90 Private Patients With Migraine.

Previous Operations	*Number*	*Percent.*
Appendectomy	13	14
Cholecystectomy	4	5
For Peptic Ulcer	3	4
Pelvic Operations	6	7
Other operations	7	8
Total	33	37

When we say that a disease is allergic in origin, while such an explanation seems at first to clarify the situation in regard to its etiology, it is really only making it more complicated. There is nothing very definitely known about allergy except that there is such a condition. At first considered synonymous with protein sensitization and closely related to anaphylaxis, the term allergy has also been made to include sensitivity to non-protein drugs and chemical substances, and to physical agents such as heat, cold and electricity. The resemblance between the problems of allergy and those of infection and immunity has been pointed out, but writers have had diametrically opposite ideas regarding this resemblance. Some have held that sensitization to a protein corresponds to susceptibility to infection, pointing out, for instance, that if the body is able to break down and utilize or discard an ingested protein, either living or inert, there is no abnormal reaction in the body, but if it is not able so to destroy this substance, either infection or an allergic reaction will result. On the other hand, some observers contend that an allergic reaction corresponds to immunity, the reaction indicating resistance to the toxic effects which the protein (or other agent) is trying to produce. The former view seems the more rational and places specific protein desensitization in the same class as specific vaccine therapy, and non-specific desensitization on a par with protein therapy of infections. As I have pointed out before, enzymes (both gastrointestinal and tissue enzymes) really produce the changes in food which the complicated theoretical protectives against infection (bacteriolysins, antibodies, *et al.*) are supposed to produce in the case of bacteria, and both are probably as similar in constitution as they are in effects. We must, however, remember that enzymes are also largely theoretical substances. Some day some physiologist will have the courage to discard all the elaborately theoretical explanations for digestion, immunity and sensitivity and try to establish a less complicated explanation, also showing how these processes are influenced by the endocrine system and by the presence in the body of chronic focal infections.

In allergy it has long been pointed out that while many and diverse manifestations may occur, there is practically never any pathological lesion remaining

* Read before the annual meeting of the American Gastro-Enterological Association at Atlantic City, May 5th, 1931.

after the effects of the reaction have subsided, although there may be gradual changes in tissues as a result of repeated attacks, as for instance the emphysema following repeated asthmatic attacks, thickened skin following repeated eczemas, and stiffened colonic walls following repeated or prolonged allergic diarrheas. The changes in tissues in an allergic reaction may be briefly described as irritative in character. Skin or mucosal irritation produces the rashes, wheals, edematous areas, purpuric spots, hemorrhages or surface sloughs which are found in eczema, urticaria, angioneurotic edema, purpura, ulcerative colitis, and other allergic manifestations; neuromuscular irritation produces the spasms of asthma and the colic of gastrointestinal allergy; renal irritation (or is it cerebral irritation?) causes allergic polyuria, and cerebral irritation produces migraine, epilepsy and the various disturbances of the special senses occurring in allergic attacks. The reason why the reaction in a given subject occurs only in certain tissues and is so rarely universal, is not known, any more than it is known why bacteria, on invading the body, show a similar selectivity. It is also not known why sensitivity or susceptibility to infection will vary according to the general physical and mental well-being of the patient, will be influenced by climate and by the season of the year and may disappear entirely for longer or shorter periods. It has long been known that these states will disappear during or after an acute general infection, during pregnancy, after the menopause, or following severe nervous shock.

Migraine conforms to all the criteria necessary to class it as an allergic phenomenon. It is hereditary, although, as in all allergic conditions, the family history may disclose other allergic manifestations than migraine. For instance, in the case of one of my patients who had migraine and urticaria as the only allergic reactions, the mother had hay fever and diarrheal attacks, the father asthma and eczema, and the only brother had diarrheal attacks. In another family, all three children had allergic manifestations, such as cramps and diarrheas, rashes, migraine and spasmodic croup, the mother migraine, the father, abdominal pains and diarrheas and a skin condition, three grandparents had had typical migraine, and one great grandparent was known to have had asthma and two had had periodic headaches. The production of an attack by the administration of the allergic substance or substances, the absence of any manifestations when such substances are withheld, the frequent presence of an eosinophilia during the attack, the often prompt relief from the administration of adrenalin and pituitrin, and the shortening of an attack, in the case of food allergy, by prompt catharsis, all tend to substantiate the allergic theory. Furthermore, the often sudden cessation of an attack, with the patient feeling normal thereafter, and the absence of any demonstrable pathological conditions at autopsy in persons who have had repeated migraine attacks, are also confirmatory facts. Migraine does not occur predominantly in either sex, although,

TABLE 2. Sex Incidence in 90 Patients With Migraine.

Sex	*Number*	*Percent.*
Males	38	42
Females	52	58
Married	53	60

as shown in Table 2, in our series there were more females than males.

Symptoms

The symptoms of migraine have long been considered characteristic. The typical attack is preceded by an aura—scintillating scotoma, or at times hemianopsia—followed by more or less severe hemicrania which may be accompanied by or is soon followed by retching and vomiting and at times by abdominal cramps and diarrhea. All of these symptoms are not, however, always present in a given case. I consider headache, unilateral or bilateral, an essential symptom in making a diagnosis of migraine although some writers have described "abdominal migraine", without headache. I have called this exclusively abdominal manifestation merely "gastrointestinal allergy". An aura is not always present and nausea may occur without vomiting, or cramps and diarrhea may be substituted for it. The incidence of

TABLE 3. Incidence of Typical Symptoms in a Study of 90 Patients With Migraine.

Symptoms	*Number*	*Percent.*
Aura	42	46
Hemicrania	50	55
Nausea	36	40
Vomiting	36	40
Abdominal Pain	21	23
Diarrhea	17	19

the principal symptoms present in my series of ninety patients with migraine is shown in Table 3.

A complicating factor in studying the history of migraine patients is the fact that so frequently there are present real lesions in the gastrointestinal tract

TABLE 4. Coincident Lesions Found in a Study of 90 Migraine Patients.

Other Diseases Present	*Number*	*Percent.*
Gastro-duodenal Ulcer	16	17
Gastro-Duodenitis	24	26
Biliary Tract Diseases	19	21
Chronic Appendicitis	27	30
Chronic Colitis	12	13
Other Colonic Conditions	9	10
Cardiovascular Diseases	8	9
Endocrine Disturbances	7	8

or elsewhere, as shown in Table 4, and the possibility that these diseases may be producing symptoms resembling migraine must be definitely ruled out. Between attacks of migraine there may be no symptoms or the symptoms of the coincident lesions may be present. A neurotic constitution is usual, focal infections are nearly always present and constipation is frequent, as shown in Table 5. This

TABLE 5. A Resumé of Some Findings in 90 Migraine Cases.

Conditions Found	*Number*	*Percent.*
Neurotic Type	72	80
Chronic Constipation	42	46
Focal Infections	85	93
Achylia Gastrica	11	12
Hypertension (150 Syst. or over)	12	13
Hypotension (110 Syst. or under	15	17

table also shows the relative infrequency of achylia gastrica, as determined by examination of gastric contents by the fractional method after histamine injection, and the fact that abnormal blood-pressures are unusual.

Diagnosis

The diagnosis of typical migraine, allergic in origin, rests upon the following findings:

1. The history of typical attacks such as described above beginning usually in childhood, coming on suddenly and ceasing rather suddenly after a period of several hours to two or three days. (The age of onset and the duration of attacks are shown in Tables 6 and 7).

TABLE 6. Age of Onset of Migraine Symptoms in 90 Patients.

Average age on applying for treatment	40 years	
Average age of onset	19 years	
	Number	*Percent.*
Age of onset at 15 years or under	39	43
15-30 years	33	37
30-40 years	15	17
40 or over	3	3

TABLE 7. Duration of Migraine Attacks and Interval Between Attacks Shown in Study of 90 Migraine Patients.

Duration of Attacks	*Number*	*Percent.*
12 Hours or less	28	31
1 or 2 Days	33	37
More Than 2 Days	8	9
Interval Between Attacks		
1 Month or Less	45	50
3 Months or More	16	17

2. A family history of allergy, and particularly a history of other allergic manifestations in the patient himself. Table 8 shows how frequently multiple allergic manifestations are found.

TABLE 8. Showing Frequency of Multiple Allergic Manifestations in 90 Migraine Patients.

	Number	*Percent.*
Migraine as only symptom	12	13
One other allergic manifestation present	55	61
More than two allergic manifestations present	15	16

3. The ruling out of an organic cause for the symptoms. Hemicrania and hemianopsia may be caused by brain lesions, unilateral sinus infection or unilateral dental infection. The gastrointestinal symptoms may be caused entirely by an organic disease in the abdomen, although frequently allergy and real gastrointestinal lesions exist together, making one often wonder whether allergy, not necessarily food allergy, but bacterial or tissue allergy, may not be an important factor in the production of these lesions.

4. The finding of the allergic factor—a food or other ingested substance, dust, bacterial protein (focal infection) or physical agent—which when eliminated will prevent attacks, and when again exhibited will produce the typical symptoms.

5. The therapeutic test, the administration of epinephrin intramuscularly, which in many cases will produce immediate, though not permanent, relief from the attack. Ephedrin given by mouth will produce later but more prolonged alleviation.

6. Eosinophilia, varying from a slight increase in eosinophiles to a very large one (from 3% to 20% or more) is a very suggestive finding.

Of the above criteria confirming a diagnosis of allergic migraine, the one which is the most important and characteristic, and often a most difficult one to determine, is the finding of the allergic factor. In some individuals, when they are apprised of the allergic character of the disease, a diagnosis is forthcoming at once, as they have always suspected certain foods or drugs as the cause of the attacks. In others, a careful history will disclose the relation between the occurrence of symptoms at some chronic focus of infection and an attack of migraine. Menstrual migraine, a part of the constitutional reaction to the complicated chemical processes occurring at the time of menstruation, is probably a sensitization to ovarian hormone or corpus luteum. Chemical changes in skin or other tissues may also account for allergic attacks following exposure to sunshine, cold or other physical agents, and the history of such exposure always preceding attacks of migraine will clarify the diagnosis. In Table 9 there

TABLE 9. Exciting Cause of Migraine Attacks (Study of 90 cases).

Exciting Cause	*Number*	*Percent.*
Food Allergy	52	58
Menstruation	15	17
Focal Infection	16	18

is shown the frequency of occurrence of the three principal allergic factors causing migraine.

In cases in which the patient is not a close observer, or is ignorant, the history alone will not suffice to make the diagnosis. In these cases the usual methods of determining the allergic factor must be employed, viz., cutaneous protein tests or intensive study of a careful record by the patient himself of all foods or other substances ingested, of his contacts and exposures and of all symptoms occurring, during a period of three or four weeks. While this record is being kept, the patient must study his reactions and when led to suspect certain foods must vary the diet or eliminate and again take the suspected foods or substances in order to confirm his suspicions. It is occasionally, though rarely, necessary to begin the dietetic study by having the patient start on a single food (like the Bulkeley rice and water diet) and add one or more foods each day, watching for reactions. Usually, however, the elimination method is sufficient for a diagnosis.

Cutaneous tests, whether by the dermic or intradermic method, are rarely necessary or desirable in the case where migraine is the only allergic phenomenon. They are mainly of value in allergic conditions in which the symptoms occur continuously or at such short intervals that they may be assumed to be due to foods or other factors to which the patient is constantly exposed. Skin tests must never be accepted as the last word in allergy, the final confirmation of the cause of the allergic manifestation being accomplished by watching the effects on the patient of repeated withdrawal and resumption of the reacting substances.

Treatment

The treatment of migraine consists of the treatment of the attack, and of the prevention of future attacks. In a general way prophylaxis might also be applied to the known hereditary character of the disease, and the avoidance of inter-marriage of families known to be the subjects of allergic manifestations would probably save much useless suffering.

The treatment of the migraine attack should consist of the elimination of the causative factor as rapidly as possible. In the case of food allergy, prompt catharsis is indicated and the drinking of large quantities of water is of distinct advantage, the latter when vomited often producing an advantageous autolavage of the stomach. Adrenalin chloride solution in doses of 10 or 15 minims hypodermically or sublingually, will often produce prompt relief, as will pituitrin at times. Ephedrine is also of help, has the advantage of being able to be given by mouth, and will often produce such prolonged relief that an attack will have subsided before the effect of the drug wears off. These substances may often cause alarming thyroid symptoms and should of course be avoided or used with great caution in hypertensive individuals. Where they cannot be used, some form of sedative may be administered, and rest, with the application of heat to the head is of advantage. I have found that early large feedings, even if initially vomited and then repeated,

(*Continued on page 430*)

A Review of Some Errors in Neuropsychiatric Practice*

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IT is hardly an exaggeration to state that our most valuable experience is obtained, not so much by successful results as by errors—errors in diagnosis, prognosis and treatment. The occurrence of these mistakes is usually associated with more or less unpleasant subjective experience on the part of the physician and, like most painful impressions, leads to a fairly lasting integration. Indeed, one has less difficulty in recalling incidents of mistaken diagnosis or of poor judgment than of correct procedures. The purpose of this presentation is to record some personal errors in neuropsychiatric practice and profit by these experiences.

Errors in Diagnosis

An ideal diagnosis in any branch of medicine requires a correct evaluation of the clinical, the pathological, the functional and the etiological components. Mistaken diagnoses, according to Martinet[1], result from one or more of the following factors: faulty examinations, errors in judgment, and ignorance.

Of these, faulty examination is the most important and arises from poor training, defective procedures, unsatisfactory patients and, possibly most important—insufficient time devoted to investigation.

Errors in judgment arise not only from innate poor reasoning power, and from laziness and ignorance but also, as frequently perhaps, from temporary disturbances of the mental faculties (emotional swings, fatigue), obsessive ideas (pets in diagnosis), a tendency toward blurred vision owing to over-specialization, excessive doubt and fear of responsibility, pride and vanity, etc.

Ignorance is probably the least important of the three factors and is of frequent occurrence where the other factors flourish. Common sense is more valuable than profound knowledge, but common sense is crystallized knowledge and presupposes careful observation and good reasoning power.

In neuropsychiatry, errors in diagnosis are especially prone to arise because of the highly differentiated and complicated structure of the nervous system, because of polymorphous manifestations arising from the wide distribution of the nervous system and the close relationship of the latter with every organ in the body, and lastly because of the psychic manifestations. The following are a few illustrative cases showing errors in diagnosis in *organic neurologic conditions.*

Case 1.—A male Negro, about 25 years of age, came under my care in the Neurologic Service at the Philadelphia General Hospital in 1915. (He had been in the hospital for several weeks when I became an interne.) He presented weakness, atrophy and pain of both upper extremities with spastic weakness of both lower extremities, and bladder and rectal disturbances. In addition, he had cervical gland enlargement and ran a septic temperature. There was limitation in the movement of the neck. The serology was positive for syphilis, both in the blood and in the spinal fluid. The case was therefore regarded as one of cerebro-spinal syphilis (luetic hypertrophic cervical pachymeningitis) and the febrile condition was ascribed to infection in the naso-pharynx with cervical adenopathy, with the possibility of an ascending infection in the urinary tract. At autopsy, there was found well advanced Pott's disease in the cervical region.

Comment: This was an illustration of insufficient investigation, for an *x*-ray of the neck would undoubtedly have revealed the true nature of the condition. It also showed that which is so often overlooked—that the existence of syphilis does not establish it as the sole cause of a given condition. Striking as this case had been, it did not prevent me from overlooking, a few months later, a somewhat similar case in the medical wards—a woman admitted with a vague abdominal disturbance which at necropsy proved to be Pott's disease of the lumbar region.

Case 2.—A thirty-year old male was admitted to the Neurologic Ward of the U. S. General Hospital No. 1, N. Y. C., in the summer of 1918 with a vague history of having had "brain fever" while in Europe. The patient appeared quiet, mute, but followed simple commands and took nourishment when spoon-fed. Objectively, he was well nourished and presented evidences of involvement of several of the cranial nerves, especially the third and sixth. Laboratory investigations were negative. A diagnosis of encephalitis was made by the ward interne. Col. Menas S. Gregory was requested to examine him and, surprisingly, stated that while the soldier might previously have had encephalitis, at present he had catatonia. For about two months the patient's condition remained unaltered. Sometime later, while the nurse turned away for a few minutes, the hitherto "paralyzed" soldier grasped the bathing alcohol, took a long drink and became so violent that it took several men to subdue him. He was transferred to a "disturbed psychopathic ward."

Comment: In this case the error in diagnosis was due largely to ignorance of both the manifestations of encephalitis,—(then a relatively young disease)—and of catatonia. The point impressed was to learn as much as possible about the various manifestations of disease entities.

Case 3.—A middle-aged quartermaster officer was admitted in the late summer of 1918 to U. S. General Hospital No. 1, N. Y. C., with evidences of marked mental deterioration. There was loss of memory of both recent and remote events; the patient was disoriented and had auditory and visual hallucinations. There was no history accompanying the patient. Physically, he was reduced in weight and untidy about his person. He had Argyll-Robertson pupils, tremors of the tongue, face and fingers, and a slurring speech. All tendon reflexes were depressed and there was ataxia. A clinical diagnosis of paresis was made and the patient immediately transferred to Bloomingdale Hospital. At Bloomingdale the serology was found to be entirely negative for syphilis and the diagnosis became puzzling. Some weeks later, Colonel Menas S. Gregory, while visiting the wards at Bloomingdale, recognized the patient as one whom he had observed at the Bellevue Hospital some years previously. Then, as now, his was a case of *bromidism;* an alcoholic who, in order to overcome the toxic effects of alcohol, had been taking large amounts of triple

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bromides over a long period of time. He recovered completely within the course of a few months.

Comment: The error in this case was due to ignorance, poor judgment and lack of experience. It taught me to regard even typical findings with suspicion and to consider other possibilities in every case. Moreover, it impressed on me the necessity of considering, in each case, the influence of *exogenous toxic factors.* This proved helpful on a number of occasions within the last few years. Thus, a young woman seen with Dr. W., about two years ago, presented marked somnolence, drooping of the upper eyelids, general weakness, ataxia, disorientation and marked memory defects. Six months previously, she had had a carcinomatous breast amputated at the Mt. Sinai Hospital. She had been nervous ever since and suffered headaches. The above manifestations had been appearing gradually during the past few weeks. The surgeon regarded her mental and neurologic condition as due to cerebral metastasis. A careful inquiry revealed that the patient had been taking from two to four allonal tablets per day for the past few months. The allonal was discontinued and the condition improved within a few months. Similarly, a case of posteriolateral sclerosis of anemic origin was seen with Dr. H., who informed me that during the past few months the patient had had almost unbearable pain in the extremities associated with tenderness. The history revealed that the patient had been receiving injections of cacodylate of soda over a period of months. The arsenic was discontinued and in the course of a few weeks the patient showed great improvement.

The importance of bearing *endogenous toxic factors* in mind is illustrated by the following case:

Case 4.—A 52-year old white chef was referred in 1926 by Dr. E. S. because of mental changes and bizarre neurologic signs. The patient had been under Dr. S's treatment for mild myocarditis for some months. Recently, the patient showed changes in personality with gradually developing fatigability, loss of memory and more recently became completely bedridden. When examined, the patient looked fairly well nourished but toxic. There was no rise in temperature and the blood pressure was within normal limits. He was confused, disoriented and showed serious memory defects. He had also a bilateral partial involvement of the third nerve, general muscular weakness, inequality of reflexes and ataxia. The neurological and mental findings suggested the existence of either syphilis or, because of midbrain implication and peculiar mental reactions, diabetes. Dr. S., however, assured me that the Wassermann reaction and urinalysis were negative. Upon admission to the Graduate Hospital, the patient had 385 mgs. of glucose per 100 cc. blood. Despite insulin treatment, the patient died.

Comment: This case illustrates the necessity of complete examinations and of re-examination, and especially the utilization of the more accurate diagnostic procedures as that of blood sugar and cerebro-spinal fluid studies as contrasted with urinalysis, and blood Wassermann.

Case 5.—A 23-year old man, when seen in early August of 1927 with Dr. H. W., complained of severe headaches, weakness and numbness of the left side of the body and the left arm and leg. The patient had been coughing (with expectoration) since childhood. In 1924, he had a hemoptysis and a chest study led to a diagnosis of bronchiectasis. He made a good recovery and was in good health until late in June of 1927 when he developed slight numbness in the left arm and leg. This he ascribed to prolonged lying on the beach at the seashore. The numbness persisted and in addition he developed headache and weakness of the left arm and leg. These symptoms, especially the headache, became progressively worse, requiring morphine for relief. The spinal fluid presented no abnormality in protein content, cytology or Wassermann reaction. The pressure was not estimated. The diagnoses considered by various consultants were syphilis, tuberculous meningitis and epidemic encephalitis.

When seen the first week in August, the patient presented a very clear syndrome: his temperature was normal; his pulse rate was 52; there was a bilateral choking of the discs, paresis of his left lower face, arm and leg, without the Babinski reflex, hyperesthesia over the entire left side of the body and very definite astereognosis. The localization was definite—in the right parietal area; the gradual onset and evidences of increased intracranial tension pointed to a space-taking lesion; and the history of a long standing bronchiectasis made the diagnosis of a brain abscess probable. This was verified by Dr. F. C. Grant, surgeon, who found a large abscess in the right parietal area.

Comment: The diagnosis in this case was easily made, bearing in mind the fact that the case was fully developed at the time the patient came under our observation, also recalling that bronchiectasis is a common cause of brain abscess.[2] The mistaken diagnosis by previous consultants was due to the fact that in the *early stages* neurologic conditions are elusive.

Case 6.—A. G., 16-year old girl, was referred on September 11, 1930, by Dr. J. L., complaining of weakness in the right hand. In 1914, at the age of seven months, she developed acute infantile paralysis of the right upper extremity. She received careful attention at the Orthopedic Hospital and in the course of years learned to play the piano and write with the right hand. She had no intercurrent illnesses or injuries but about two years ago noticed that the index finger and later, the other fingers of the right hand, tended to remain flexed. In the past few months there developed a contracture of the right hand with flexion of all fingers and flexion of the wrist upon the forearm.

Examination revealed atrophy of the right pectoralis major and minor, the deltoid and all the muscles of the forearm and hand, with fibrillary tremors of the pectoral and deltoid regions. There was weakness of all the groups of muscles, especially the triceps and extensors of the wrist and fingers. There was a marked contracture of the flexors of the fingers. The biceps and triceps reflexes were totally absent. There was no spontaneous pain, tenderness over nerve trunks nor any sensory disturbances. Neurologic examination and re-examination failed to reveal abnormality in any other part of the body. There was no disturbance in motor, reflex, sensory or synergic control.

The weakness and contracture were not explained and a lumbar puncture was deferred. All other investigations including an *x*-ray of the spine were negative.

A month later the child suddenly developed paraplegia with a definite motor and sensory level. At operation a cystic tumor was found in the upper part of the cervical cord.

Comment: The rather serious error in the diagnosis in this case is traceable to both unavoidable and to inexcusable factors. The first of these depends upon the relatively early stages of the disease for very careful clinical examinations gave us no inkling of the disease process; subsequent examinations were not made as the patient disappeared. Although it was felt that clinical phenomena were not explained, further studies were impossible. The inexcusable factor is the failure of spinal fluid studies and possibly intra-spinal oil injection, which might have shown evidences of block. It was again a

case of incomplete investigation rather than lack of judgment.

Case 7.—H. R., a 55-year old butcher, was referred by Dr. I. F., on August 2nd, 1929, complaining of weakness and numbness in all four extremities of about 18 months duration. The condition began with cramps in the legs on exertion and a progressive development of pronounced weakness and numbness in the distal parts of the extremities. Objectively, he presented pupils which reacted poorly to light. There was weakness in all extremities but especially in the hands and feet. There was no atrophy. All tendon reflexes were abolished. The Hoffman and Babinski signs were negative. There was slight impairment of the sense of touch at the tips of toes and fingers, slight impairment of vibratory sense in the lower extremities and no other sensory disturbance. There was no tenderness on pressure over the nerve trunks. Synergic tests were carried out poorly. There were no sphincter disturbances.

Laboratory investigations at the Graduate Hospital failed to disclose abnormalities excepting a moderate leucocytosis (15,000 to 20,000) with a relative lymphocytosis. Blood and spinal fluid Wassermann reactions were negative, and the blood analysis and gastric analysis failed to reveal evidences of pernicious anemia. The case was thought to be atypical multiple neuritis and a relatively favorable prognosis was given.

The patient did not improve rapidly and the following month was admitted to another teaching hospital where the chief of the clinic made a diagnosis of an anemic cord. The diagnosis was based largely upon the loss of deep sensibility with preservation of superficial sensibility, and on muscular weakness of pyramidal origin. Although our sensory findings varied from those above mentioned and despite the absence of definite pyramidal tract signs, of achylia, of blood changes, etc., the diagnosis was made.

The patient then went through the gamut of chiropractors, osteopaths, soothsayers, etc., and was finally admitted to a general hospital where he made a complete recovery in less than a year. At no time were there evidences of pernicious anemia and his recovery was similar to that of one having peripheral neuritis.

Comment: The error in diagnosis in this case can be traced to *poor judgment*. In retrospect, it may be said that apart from neurological findings, there were no findings suggestive of pernicious anemia. This, in company with the chronological development of the case, especially the motor weakness and numbness in the distal parts of the extremities, should have established the correct diagnosis, i. e., multiple neuritis. In this case, the facts were ascertained but the reasoning was poor.

The above cases illustrate how errors can be made in organic neurologic conditions. Even more important because of greater frequency and complexity is the accurate diagnosis of psychic manifestations. This phase of the subject, however, is discussed elsewhere.[3,4] In passing, it may be noted that a diagnosis of psychoneurosis and psychosis presupposes not only a complete somatic investigation but also an evaluation of the psychic manifestations and mechanisms in relation to the personality of the patient and the many complex environmental factors in life. It is not hard to understand why there should be many pitfalls in the diagnosis of these cases.

Errors in Prognosis

Accurate prognosis is of greatest importance in neuropsychiatry, especially in mental diseases. This arises from the fact that the prognosis of neuropsychiatric conditions often determines the mode of treatment and the questions of legal commitment, appointment of guardianship, types of institutional care and allied legal, social and economic problems. Errors in prognosis may at times have disastrous effects upon the patient and the family, with unpleasant consequences to the medical attendant.

The reasons for errors in prognosis in organic neurologic conditions do not differ widely from those in other branches of medicine. Chief among these, given a correct diagnosis, are the uncertainty of the course of various conditions such as vascular insults and the response to treatment, especially so in neurosyphilis. The problem of vascular lesions in the brain is often not as hopeless as one generally believes and is comparable to the problem of hypertension.[5] The two following cases show how a cheerless prognosis in cerebral vascular cases was not borne out by experience.

Case 8.—F. T., a 74-year old woman presented, when first seen in 1920, right-sided hemiplegia, aphasia, semi-stupor, incontinence of urine and feces, systolic blood pressure of over 250 mm. of Hg., a large heart with a loud apical systolic murmur, marked radial and temporal arteriosclerosis and retinal angiosclerosis. The acute symptoms appeared during the preceding night. Blood Wassermann and urinalysis were negative and the patient showed slight improvement for about five weeks. In view of the objective findings and the course of the disease, an unfavorable prognosis was given. Nevertheless, the patient made an almost complete neurological recovery and was able, within three months, to walk with a barely perceptible limp. She died in 1931, from a cyst of the pancreas. (Operation by Dr. Eliason at the Philadelphia General Hospital.)

Comment: The prognostication of cerebral vascular insults—especially in elderly people—is often extremely difficult. The guess as to how much of the clinical picture is due to spasm, to occlusion or to oedema is often false. Thus, in a 35-year old woman, examined with Dr. A. P., there was complete right-sided hemiplegia with aphasia, which condition came on a few hours previously. The patient's blood pressure was nearly 280 mm. Hg., yet she recovered completely within 48 hours.

Case 9.—A 56-year old paperhanger was admitted to the Graduate Hospital in 1925 in a comatose condition. There was a history of excessive alcoholism. He suddenly fell over while at the table eating, a few hours prior to admission. The paitent was plethoric; systolic blood pressure, 230,—diastolic 170; enlarged heart. He had rigidity of the neck, small, unequal pupils, flaccid paralysis of the left side with a Babinski sign, incontinence of urine and feces and bloody spinal fluid. The blood urea nitrogen was high and the urine was loaded with albumin and casts. The patient remained semi-stuporous for nearly two weeks. A diagnosis of cerebral hemorrhages with poor prognosis was made. Nevertheless, the patient recovered in less than one year and is now doing full duty as a paperhanger.

Comment: Even a frank cerebral hemorrhage in the presence of hypertension and nephritis need not call for a hopeless prognosis. Yet, when it is considered that the majority of these cases are fatal, one cannot be certain of the termination.

The prognosis is even more difficult in the psychoneuroses and the psychoses. For therapeutic purposes, the questions of recovery, degree of recovery and duration of the psychoses are of greatest prognostic significance. In cases where the diagnosis is clear, as in manic-depressive psychoses, the duration is usually uncertain. The lack of reliable prognostic criteria is especially significant in the involution psychoses as only 50 per cent of the cases recover; here also it is difficult to predict

the duration of the affection or the completeness of recovery. Most important, however, from the standpoint of prognosis are the schizophrenic types of reaction. This large group of cases designated as dementia praecox includes a wide range of reactions varying from a relatively mild transient withdrawal from reality, to a deep regression, with hopeless invalidism and a correspondingly variable prognosis. There is no doubt that dementia precox has lost a great deal of its pessimistic and fatalistic forebodings. In the individual case, however, it is extremely difficult to foretell the degree of recovery. Even with a careful consideration of the family and personal history of personality, the precipitating factors of the onset and of the somatic and psychic phenomena of the psychosis, it is almost impossible to state with certainty the outcome of the case.[6] In no other psychosis is there need for greater finesse in observing and evaluating all factors, both psychic and somatic, for understanding disease than in schizophrenic reactions. Any psychiatrist can relate examples such as the following case:

Case 10.—F. A., a 20-year old Jewish, married woman, with a good family history and personal history, had complained of "neuritic" pains for several months and had had a tonsillectomy performed (ether anesthesia) in February, 1923. She made a good surgical recovery but, within a few days, developed ideas of reference, visual and auditory hallucinations, delusions of persecution and of marital infidelity, with preservation of memory, orientation, adequate affection reaction, and lack of insight. The case was studied by a number of keen and experienced psychiatrists all of whom gave a hopeless prognosis and advised, in view of the moderate means of the family, hospitalization in a state institution. Nevertheless, in less than ten months, the woman recovered completely. She has remained in good health to date notwithstanding a great amount of physical and mental stress.

Comment: In retrospect this patient's recovery taught me a great deal. Some features in the case should have made the prognosis not quite so pessimistic. Thus the adequate emotional reaction to the hallucinoses and delusions, the favorable family and personal history and the acute onset following surgical procedure made the outlook less ominous. Experience also showed in the course of years that acute stormy psychosis in Jews is not as unfavorable as in others. These principles served in good stead in later schizophrenic cases.

In the above case, a toxic element due to ether was considered. The rôle of endogenous and exogenous toxic and organic states often complicates the ability of accurate prognostication. This is especially true in psychotic states occurring after the fifth decade, and in the psychoneuroses.

Errors in Treatment

Errors in treatment in *organic* neurologic conditions arise as a result of faulty diagnosis. This occurs particularly when all therapeutic efforts are directed to the major conditions, overlooking minor conditions, which often retard recovery. Thus in neurosyphilis, especially in tabes dorsalis, one is apt to concentrate on specific antiluetic treatment and overlook the search for and treatment of other conditions, which may contribute toward the continuation of major symptoms. In other neurologic diseases judgment is required in the use of lumbar puncture[7], which, in some instances, may be harmful; of timely neuro-surgical interferences in brain abscess and neoplasm; and in the handling of toxic and vascular cerebral insults.

The management of the psychoneuroses is an error factor for the neuro-psychiatrist. The failure of psychotherapy cases due to underlying somatic disease has been described elsewhere.[4] In the absence of demonstrable organic disease, in cases which are really psychoneurotic, the choice of the method of treatment is of great importance. The indiscriminate employment of the "rest-cure" in psypchoasthenias and some hysterias often leads to a more permanent and deeper fixation of the neurosis. Avoidable surgery is of decided harm in some neurasthenias and anxiety states, only multiplying and amplifying the symptoms and adding to the vicious circle. Psychoanalysis of a poorly chosen subject is equally disastrous to the patient, the analyst and the method. In the treatment of the psychoneurosis the employment of the physiologic methods and especially of the various forms of psychotherapy (suggestion, persuasion, hypnosis, psychoanalysis) requires as much judgment as the choice of subject for surgical operation and the details as to technical procedure to be carried out.

In the management of psychoses, errors result in such unpleasant, avoidable occurrences as suicides, homicides, illegitimate pregnancies, criminal acts, squandering of estates, etc. The advisability of hospitalization of cases is often of considerable importance; some forms of psychoses improve more rapidly in the home than in an institution, when better adjustment and integration become possible. Failure to take into consideration all factors in the case often retards recovery and makes the final outcome less favorable.

Summary

A review of the personal errors in neuropsychiatric practice discloses that:

Errors in diagnoses in neuropsychiatric conditions arises as a result of faulty examinations, errors in judgment and ignorance. The highly differentiated and widespread structure of the nervous system and the relation of the mind requires, for a correct diagnosis, an evaluation of the *entire* soma—and psyche—and makes misdiagnoses easier in neuropsychiatry than in other branches in medicine. Seven illustrative cases are cited.

Errors in prognosis in organic neurologic conditions are due to causes similar to those in other somatic diseases, and depend upon uncertainty inherent in the coure of pathological states. The prognosis in the psychoneurosis and especially psychosis is often difficult and in some cases almost impossible of accuracy. Three illustrative cases are cited.

Errors in treatment of organic neurologic conditions depend upon incomplete diagnoses, failure of timely employment of available agents or employment of harmful agents. In the psychoneuroses, the choice of proper physiologic and psychotherapeutic procedures is of paramount importance. In the psychoses the avoidance of certain accidents and the need for a broad approach to the individual case are required to avoid errors.

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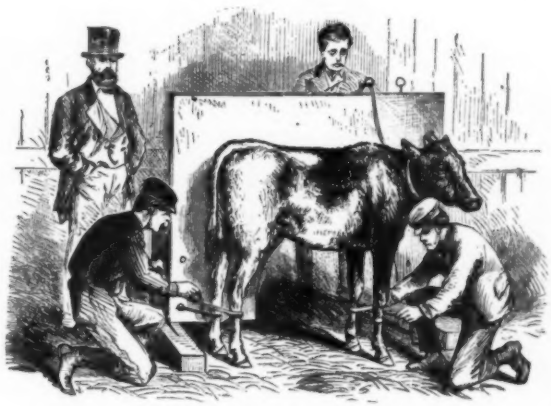
LITERATURE

1. Martinet, A.: Clinical Diagnosis, Vol. I., P. 15. Translated by L. T. M. Sajous. F. A. Davis Co., Phila., 1923.
2. Gardner, W. J.: Metastatic Abscesses of Brain of Pulmonary Origin: A Report of Two Cases. *Arch. Neur. and Psych.* 19:904, May, 1928.
3. Yaskin, J. C.: Nervous Symptoms as Earliest Manifestations of Carcinoma of the Pancreas. *J.A.M.A.* 96:1664, May 16, 1931.
4. Weisenburg, T. H., Yaskin, J. C. and Pleasants, H.: Neuropsychiatric Counterfeits of Visceral Disease. Presented at the Meeting of American Medical Association, Section on Nervous and Mental Diseases, Philadelphia, June 10th, 1931.
5. Riesman, D.: High Blood Pressure and Longevity: Report of Cases. *J.A.M.A.* 96:1105, April 4, 1931.
6. Strecker, E. A. and Willey, G. F.: Prognosis in Schizophrenia—Schizophrenia. The Association for Research in Nervous and Mental Disease. 5:403, Hoeber, N. Y., 1928.
7. Yaskin, J. C.: Non-Suppurative, Non-Epidemic Encephalitis Occurring after Labor and in the Puerperium. *Neurology and Psychiatry.* 26: 371, Aug., 1931.

Fifty Years Ago

No. 862—Vol. XXXIV.] NEW YORK, APRIL 6, 1872. [Price, 10 Cents. $4 00 Yearly. 13 Weeks, $1 00.



THE SMALL POX EXCITEMENT.—STRAPPING THE CALF TO THE OPERATING-TABLE.

THE SMALLPOX EXCITEMENT.—DR. CHAMBON INOCULATING THE CALF WITH VACCINE VIRUS.

THE SMALLPOX EXCITEMENT.—DR. CHAMBON VACCINATING PATIENTS IN HIS PARLOR WITH VIRUS TAKEN DIRECTLY FROM THE ANIMAL.

An interesting old print entitled "The Smallpox Excitement—Dr. Chambon Vaccinating Patients in his Parlor with Virus taken directly from the Animal," which appeared in Leslie's Weekly of April 6, 1872.

Malignant Glaucoma

*A Study in Tonometry**

JOHN N. EVANS, M.D.,
Brooklyn, N. Y.

E. D., aged 41, female, colored, entered service of Dr. John Ohly on February 1st, 1927.

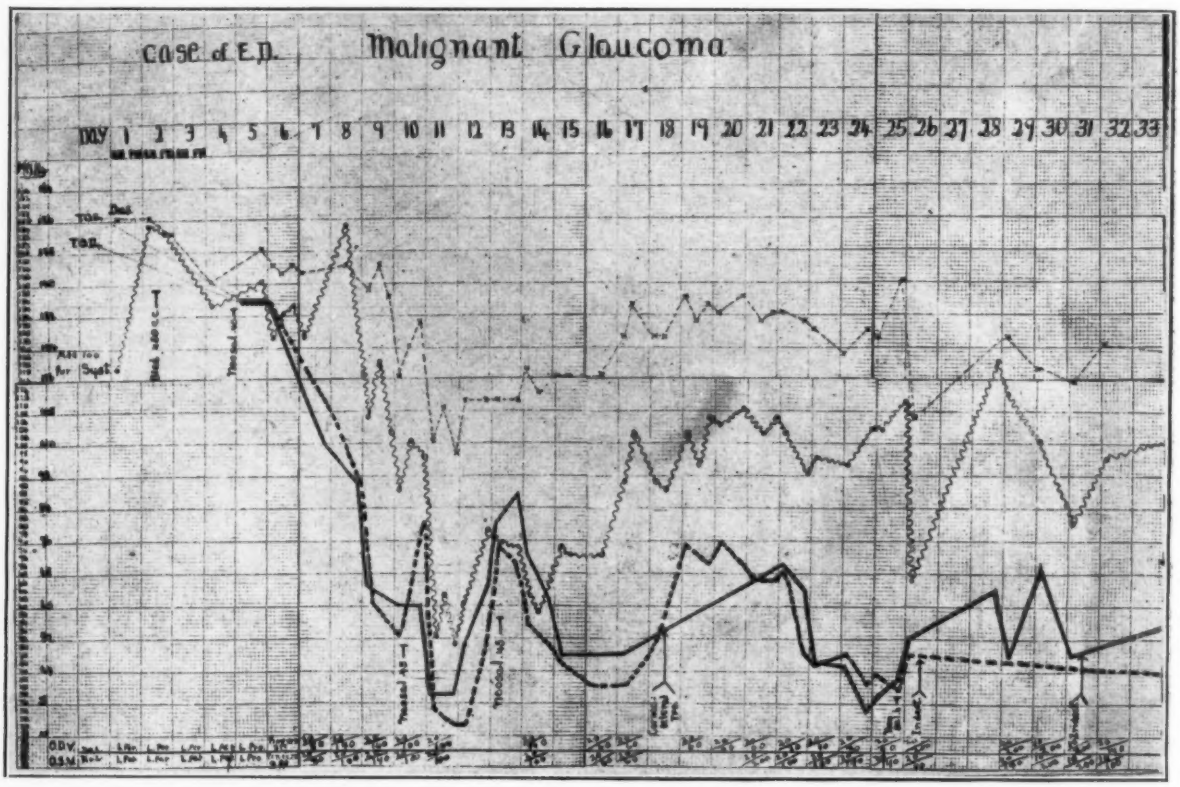
The chief complaint was sudden blindness, discovered after a "stroke" which left her partly paralyzed. This occurred three weeks ago. She has had constant frontal headaches ever since.

Past history shows only two points of significance. Five years ago there was a history of salpingitis. There were eight pregnancies, six of which resulted in spontaneous miscarriage and two children who are living and well. The menstrual periods have been irregular during the last year. The last two have been missed. She has been "doctoring" for high blood pressure. Her mother died at the age of sixty-three of a "stroke."

The examination showed both corneae so steamy that no fundus reflex could be obtained. The pupils could only be dimly made out, and seemed dilated. Tension by palpation seemed only moderately elevated, but the peculiarity lay in the fact that there was not the slightest congestion, either deep or superficial, and there was no ocular pain. The patient was admitted at once for observation and study.

It was at first considered that the condition was a hemorrhagic glaucoma, and this idea seemed strengthened by the tremendously high blood pressure and history of what she called a "stroke."

When it was found that the intra-ocular pressure was so much higher than palpation had made it appear, the question of therapeutic measures became complicated. To use a myotic energetically might result in sufficient absorption to increase the already dangerously high blood pressure; to perform any sort of operation might result in a severe intraocular hemorrhage by the sudden relief of pressure, and delay would result in more permanent damage.



Strong catharsis and sweats were, therefore, instituted and 450 c.c. blood were drawn in the hope that hypertension could be improved enough to permit the adoption of surgical measures. The results being unsatisfactory, it was considered justifiable to give a moderate dose of salvarsan in spite of the presence of albuminuria and a few granular casts. There was also a somewhat enlarged heart. There was no evidence of there having been a stroke, as the patient had stated. The Blood Wassermann test was negative.

The charts of daily blood pressure and ocular tension will best serve to follow the course of this unusual case through the two and one-half months.

The most noteworthy features may thus be enumerated:

1. Injection of salvarsan was followed by marked and rapid drop, not only of intra-ocular, but of blood pressure.

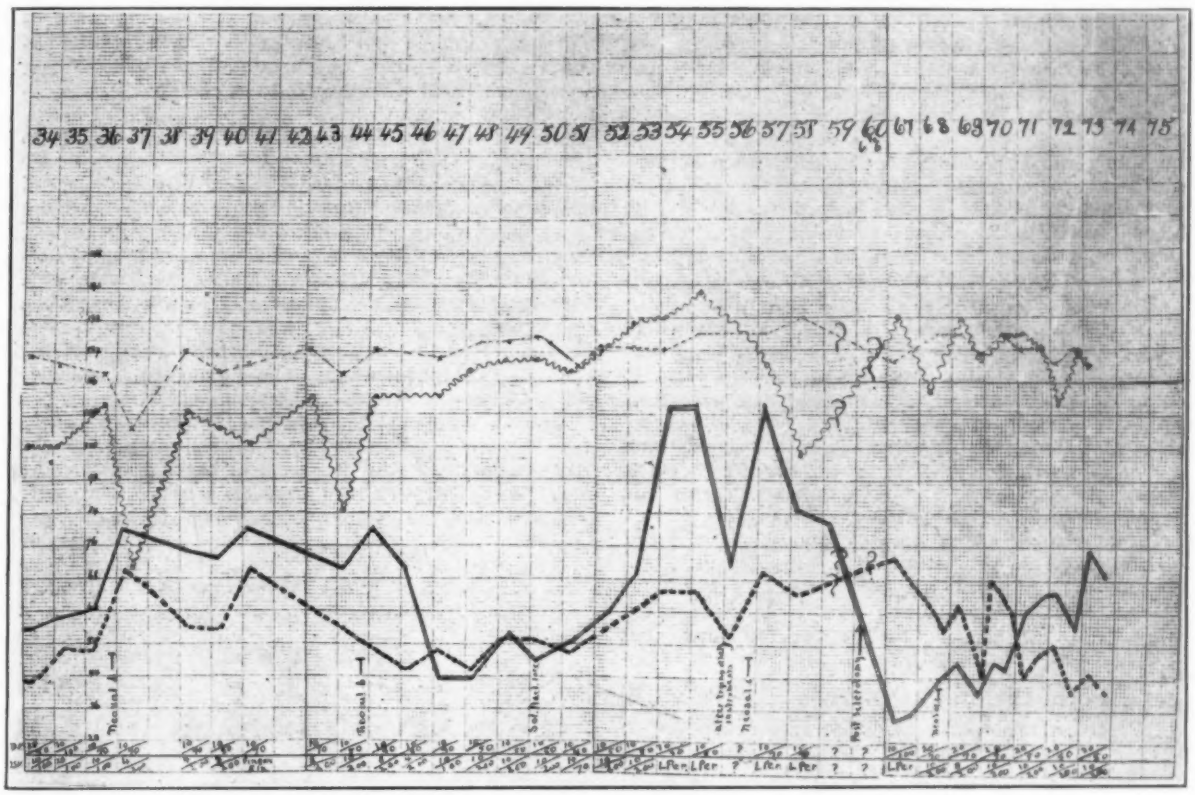
* The subject of this note was a patient at the Brooklyn Eye & Ear Hospital.

2. Fluctuations in blood pressure and intra-ocular pressure seemed to parallel each other, with few exceptions, throughout the whole course of the study. (See an experimental study by Bothman ond Cohen, *Arch. of Ophth.*, Mar., 1927.)

3. Intra-ocular pressure was quite consistently higher in the morning than at night, but the reverse sometimes obtained. (See 10th to 25th, and 63rd to 73rd day.) (This point is well demonstrated in a paper by S. Hagen on "Glaucoma Pressure Curves" appearing in the *Acta Ophthalmologica, No. 2*, 1924-25, p. 199.)

4. Operative intervention was not successful in preventing a subsequent rise of pressure. The posterior sclerotomy was of interest because as the sclera was trephined there was a gush of aqueous-like fluid (perhaps 1-2 c.c.) which had none of the characteristics of leaving the lumen of the vessel patent. The absence of congestive symptoms and hemorrhages was particularly noticeable in this case, and post-operative reaction very slight. Perhaps the marked sclerosis of the vessels accounts for the lack of these signs both before and after operation. During the first twenty-eight days tincture of digitalis was administered (m. XXXV, T. I. D.).

An intravenous injection of a hypertonic salt solution was administered in place of the usual salvarsan on one occasion to determine whether the action of the arsenical was specific or whether its hypertonic effect was responsible for the result. This was done on account of reports that hypertonic salt solution not only lowers intra-cranial pressure, but also intra-ocular. See F. Tremont-Smith, "Nature of Cerebro-spinal Fluid"—*Arch. of Neuro. and Psyc.*, Vol. 17, No. 3, March,



liquid vitreous; normal appearing vitreous also presented). This is of interest because of the theory which some hold which states that the glaucoma is due to a sort of oedema or "dropsy" of the vitreous.

5. Other interesting relations are:—variations in visual acuity and tension as influenced by operations, medication and rest, etc.

The first fundus examination was possible on the ninth day after admission when the ophthalmoscope showed the peculiar phenomenon of a deep cupping of the lower temporal quadrant of each nerve-head to the extent of three diopters. This gradually extended until the whole nerve head became excavated to four diopters in depth. The visual fields were reduced to 15 degrees in diameter in each eye at the period of lowest tension.

The vessels were greatly sclerosed, in some places being entirely replaced by fibrous bands; others showed a reappearance of the blood stream peripherally to the white wall as if there were a pervivascular thickening

1927). No such effect was noted in this instance.

At the time of discharge, vision was 20/50 in the right eye and 10/200 in the left. The patient returned but once in the next six weeks; the defective light projection was all that remained. The patient died about two years after the loss of vision, from some sort of cerebral vascular accident.

It is realized that other factors must be considered as playing a part in this study, such as—

1—Rest in bed.

2—Cardiac medication.

3—Possible menopause disturbances.

4—Fluctuations which the condition may naturally show, etc. All these considered, however, it would seem that the salvarsan at times was the only agent after the use of which a *sudden* drop of tension was observed. It need not be assumed from these conditions that blood pressure bears a relation to intra-ocular

(Concluded on page 430)

Treatment of Industrial Fractures

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A FEW years ago Sir Robert Jones delivered a lecture at the University of Liverpool in which he said that our position today is tragic, for the majority of fractures treated by conservative or non-operative methods are badly united, with resultant disability. The treatment of fractures is at present a blot upon our surgical escutcheon. He also criticized the large teaching hospitals, pointing out that the out-patient fractures are treated by junior members of the staff with little or no experience, while the recumbent or severer cases admitted to the hospitals are scarcely, if at all, better off, in that they are so often left to the care of the house surgeon.

No doubt the great majority of surgeons believe as Sir Robert Jones does that fractures of any type are major conditions and should receive the same consideration that other major conditions receive. There are, however, some surgeons who consider fractures very lightly and usually relegate the treatment of them to some other member of the staff who, in turn, passes them on to some one else until finally the youngest member of the staff finds himself in charge of the cases. These members are usually too inexperienced to apply proper therapy, with the result that Sir Robert Jones pointed out.

Fractures are major conditions and should always be given the same consideration as other major conditions. Compare, if you will, the loss of time resulting from an appendectomy, herniotomy or cholecystectomy with the loss of time resulting from various types of industrial fractures and you will find that the latter usually result in a far greater loss than do the former. Were we to accord the same attention to industrial fractures that we do to appendectomy and other operative procedures, we certainly could reduce this tremendous economic loss.

Throughout the treatment of fractures it is necessary to make one's objective a good functional result. This does not necessarily mean that a good functional result always follows good anatomical results, for many times good functional results may be obtained where it is impossible to obtain perfect anatomical position, and on the other hand poor functional results may be obtained where perfect anatomical reduction was obtained. In these latter instances the poor results may have been due to the tremendous damage done to the soft parts and also to the formation of excessive callus. The period of immobilization should not be prolonged in the average case. Shorter periods of immobilization usually result in returning patients to their occupations at the earliest possible date.

In uncomplicated cases, reduction can be accomplished at once under general anesthesia and the parts immobilized by means of circular plaster of Paris bandages. These bandages should be divided into anterior and posterior halves within a week, at which time heat therapy can be instituted. Active and passive movements should be carefully given shortly thereafter.

In complicated fractures with overriding of the fragments gradual traction in a modified Jones's or Thomas's splint usually overcomes the overriding. After the deformity is corrected the limb should be immobilized with moulded plaster splints.

No form of massage is permissible over the injured segment, save only gentle surface stroking, until union is firm. Even in performing this, the area of fracture must be omitted from the stroke. It is well to begin over an area which is not sensitive and gradually extend the length of the stroke till the site of the fracture is approached. The stroke may then be increased to include the area beyond the fracture, only the actual site of the injury being omitted.

When union is complete there are various danger-signals which must always be regarded. Any increase in tenderness at the site of fracture is an indication for the cessation of mobilization. It indicates irritability of the callus due to yielding of the union. An increase in swelling means that treatment the previous day has been excessive. The same deduction may be made if movement is more restricted. Massage is to be continued, mobilization reduced or omitted, should these symptoms arise.

Sudden onset of pain with swelling may be due to thrombosis; treatment by mobilization and massage should be omitted at once. The patient's life may depend upon this precaution. In addition to pain and swelling there may be a rise in temperature. The patient usually describes the pain as resembling a cramp and tenderness can be elicited along a line in the long axis of the limb. If a superficial vein is implicated there will be redness, but if the vein lies deep there will be none.

Great care must be taken adequately to support the ends of the broken bones. The details require modification to suit the needs of each individual case.

It must be remembered that in administering mobilization there is one direction in which movement can be applied that will tend to displace the fragments more than movements in other directions, while it is usual to find that in one direction at least movement has no tendency to cause displacement. This movement is, of course, the first to be administered during the performance of relaxed or active movement. Any movement that tends to displacement is postponed until union is firm.

In fracture of the clavicle, if the fragments are not liable to slip, the treatment may be instituted while the patient sits with the elbow supported on a cushion. If there is any danger of displacement, the patient should be supine, with the head low, elbow supported by the side and the hand resting on the body. Massage should deal with the neck and the pectorals before the limb is touched, but the entire limb requires treatment.

Movement of the hand, wrist, elbow and rotation may all be freely given from the outset. Movement of the shoulder may be commenced very slowly and gently from the start if the fragments do not tend to shift. If the fragments are mobile, movement of the shoulder should be postponed from a week to ten days and then it should be instituted very cautiously. Unless strapped, the patient should be permitted to move the hand and wrist freely from the onset. A simple fracture of the clavicle never fails to unite, but undue mobilization causes an excessive callus formation.

Fracture of the outer or inner third rarely leads to deformity, and treatment can therefore be advanced more rapidly. It is often possible to allow full underhand use from the outset. It is always necessary to pay special attention to the structures just above the bone. Failing this, some of the platysma may be caught between the fragments. This is a fertile source of subsequent pain

and disability, as some of the fibres of the superficial cervical plexus are almost certainly involved. It can be loosened only by very slow stages and with great difficulty.

A fracture of the upper third of the humerus may be impacted. Here, as elsewhere, impaction should often be respected, and, if this is done, the impaction may be regarded as the first stage in repair and the limb treated as if union had just occurred. Unimpacted fractures in this situation, if treated by mobilization and massage, usually unite about the eighth day. Massage is carried out as for fracture of the clavicle, but a greater area of the back should be treated so as to include the latissimus dorsi. Mobilization is required as for fracture of the clavicle, particular attention being paid to the hand movements.

No movement should be given to the shoulder for eight or ten days and then all other movements should precede rotation. Slight movements in every direction, excluding rotation, may be given from the outset provided the limb receives adequate support. Championnière used to say that, thanks to mobilization, fracture of the surgical neck of the humerus might be classed as a trivial injury. Weight and pulley exercises may be instituted within two weeks and full use be allowed during the fourth week. Full strength should be regained about the eighth week.

If fracture of the upper end of the humerus includes separation of the greater tuberosity, it occasionally occurs that callus which forms or even the tuberosity itself may impinge on the acromion during abduction. If this should be present, the arm should be placed upon an abduction splint, in which position union is permitted to take place. This insures that there will be little interference with the movement of abduction. For some reason or other, these fractures are always more painful than those in which the shaft of the bone alone is involved.

Fractures through the middle of the shaft of the humerus require a little longer time to unite, about ten or twelve days. It is easier to give movement to the shoulder after this accident than it is when the surgical neck is fractured, but elbow movements must be more carefully guarded.

The great danger of fractures around the elbow-joint, with the exception of the olecranon fractures, is the subsequent formation of an excess of callus. In giving massage and mobilization of the shoulder, wrist and hand early, two rules must be scrupulously obeyed. The first is that massage throughout the early stages should be limited to the easing of pain and the second that mobilization for the first three weeks must consist only of relaxed movements given very sparingly.

After the first week, it may be of advantage to institute gentle kneading for the edema, but great care must be taken to avoid the area of injury and to proceed so gently that not a trace of movement takes place between the fragments. The limb will almost certainly be kept in a position that is a shade short of full flexion. It is meant to be in full flexion, but this is a very painfully cramped position and is equally difficult to secure permanently. Taking the position in which the limb is fixed as about thirty degrees, the angle is increased by about ten degrees and then decreased again to the original thirty degrees. This movement is performed once only, and after a complete relaxation has been secured.

Next day perhaps an extra five degrees of extension is performed once only, and by the end of the week the angle to which the limb is extended should reach only about sixty degrees. By the end of the next week it may perhaps reach one hundred and fifty degrees. During the following week full extension may be given except for the last few degrees of movement. It is probable that the elbow will not be completely straightened until the end of the fourth week or even later. It may prove necessary to apply a straight splint before the last few degrees of extension are secured.

The patient may be allowed to assist flexion from the end of the second week, and to perform it voluntarily sometime during the third week of treatment. Throughout the treatment of these injuries a careful watch must be kept for any increase of pain and sensitiveness. In the event of either being detected, the indication is that the callus is irritable and it should therefore be regarded as an absolute contraindication to further mobilization until it is relieved. A more gradual increase in the range of motion is then undertaken.

It is very important to recognize that one can obviate permanent deformity by bearing in mind the existence of the "carrying angle," when reducing fractures of the lower end of the humerus.

Except in cases of fracture of the head of the radius, rotation may be instituted early, pronation being added to the extension from about the end of the first week, with supination to assist restoration of flexion. If the head of the radius is involved, rotation must be performed very tentatively. For no very apparent reason these fractures tend to throw out an excess of callus more readily than perhaps any other fracture in the body, not even excluding fracture of the ribs and the so-called separation of the lower epiphysis of the humerus.

When in some patients who seem to be progressing favorably, but who complain of pain, treatment is temporarily discontinued, reduction of mobility of the elbow may ensue. This may progress until permanent loss of mobility and power may result. Absolute rest and heat therapy will, however, occasionally prevent complete disaster. The cases in which this excess of callus is most commonly seen are those in which faulty diagnosis has been made.

The main laws when treating a fracture near the elbow-joint are "go slow" and never multiply movements until the end of the third week.

There are three symptoms which, if they arise, indicate that something is wrong. These are increase in pain, decrease in mobility, and tenderness over the site of the fracture. Last, but by no means least, the absence of local edema may be regarded as an assurance that no great risk is being run, while its presence should fill us with suspicion. Local edema in front of the elbow, if present, usually indicates blood-clot. If the newly-forming callus is irritated, the whole of this clot will ossify, and if, as often happens, it should run into the interstices formed by rupture or tearing of muscle fibres, it will lead to a condition closely resembling myositis ossificans, usually in the brachialis anticus. If there is no local edema there cannot be any large amount of extravasated blood, and hence ossification outside of the bone, even if it does occur, is not likely to be excessive.

There is one form of fracture of the humerus, near the elbow, after which no fear of excessive callus formation need be entertained. This is a T-shaped fracture into the joint. The synovial fluid, it would seem, inhibits the growth of the callus. Unless mobilization is administered with a somewhat free hand, it is not uncommon to find non-union as a sequel to the accident. The mobilization tends to counteract the inhibitory action of the synovial fluid.

One more pitfall. It is difficult to explain how an elbow can be dislocated backwards without fracture being coincident. It appears, however, that it is possible. Even without dislocation, and even if radiography can produce

no evidence of fracture, any severe injury near the elbow is liable to produce an outpouring of callus from somewhere, or, if not true callus, of a deposit which develops into new bone. Treatment of these injuries should therefore be very cautious.

Fractures of the olecranon process may be complete or incomplete. In the latter case the untorn periosteum will form an efficient splint, strengthened as it is by fibres from the insertion of the triceps. Nothing need be feared from the bony injury, and so the only condition that calls for treatment is the arthritis of the elbow-joint.

The treatment consists of massage for the relief of pain, superficial stroking only, which is given to restore the tone of the vasomotor system of the limb and to relieve spasm. Full relaxed movements of hand, wrist and shoulder are given and thirty percent of elbow movement. Free active movements of hand and shoulder are prescribed, provided that movement of the elbow is limited. Relaxed and active movements proceed regularly day by day, guided in extent by the amount that can be performed without pain.

If the fracture is complete and the smaller fragment of the olecranon is drawn up by the spasm of the triceps, few surgeons can be found who would recommend massage from the outset. Championnière, who was the first surgeon in France to operate upon these fractures, gradually came to the conclusion that the results attainable by mobilization and massage were so superior to those following operation that he abandoned the latter altogether in favor of the former.

A few cases are still recommended for conservative treatment from the outset; for patients who are unsuited temperamentally or physically for operation. An excellent result may be assured provided that the surgeon and the patient fully appreciate the fact that union will not be sufficiently firm to support any serious degree of tension for four weeks. Therefore, during this period, anything that pertains to the nature of overhead movements must be prohibited.

From the outset one's aim should be to secure by gradual stages relaxed movement from ninety to one hundred and seventy degrees. After ten days or so, the sole guide being the painless nature of the movement, any underhand use of the hand may be encouraged. After this stage has been reached flexion may be increased until the movement is complete about the end of the third week. As no overhand movement is to be performed for so long a time, great care to retain the suppleness of the shoulder and the strength of the deltoid must be taken.

Fracture of one bone of the forearm presents, as a rule, little difficulty. Union of the lower end of the radius or of the upper third of the ulna is usually firm enough to allow great freedom of relaxed movement in eight or ten days. Active movements may almost always be indulged in with ever-increasing freedom from the end of the second week, provided they are painless and no tenderness or swelling follows use.

As the site of the fracture ascends the radius or descends the ulna the time required for union to take place increases steadily, till a maximum is reached for the lowest inch of the ulna, where a fracture frequently requires some three weeks to unite.

Fractures of both bones of the forearm are the *bête noire* of all methods of treatment. After operation they frequently fail to unite. The same fate often awaits the use of ordinary splintage, while treatment by mobilization is occasionally not much more satisfactory.

Certain it is that great risk is run by those who are unfortunate enough to sustain this injury. Until union is complete in both bones one's main duty is to attend to the circulation of the arm and to see that the fingers remain supple. Massage of the forearm should only be applied with the anterior splint in situ.

One of the most efficient methods of applying splintage is to fix one splint from shoulder to finger-tips posteriorly and another from the wrist to the shoulder anteriorly. In applying the splints it is essential to note that the carrying angle is maintained. This entails the use of a very broad posterior splint. This method of splintage produces an appearance in the limb that would seem to be deplorable, and the restoration of movement is very troublesome unless performed in one way. Begin with slight pronation of the forearm, and flexion of the elbow follows naturally. Flexion, without this preliminary, will cause endless trouble.

Fracture of the carpal bones with displacement requires surgical intervention. After operation, or if there is no displacement, treatment should be the same as recommended for fractures through the lowest inch of the radius.

Fractures in the hand involving the metacarpus or phalanges occur very commonly in industry and often require more prolonged treatment than do fractures of the larger bones. The long bones of the hand are concave on their palmar surface, and therefore flat splints with full extension of the fingers tend to produce a palmar convexity at the site of fracture. A pad of wool or a dressing about the size of an ordinary tennis-ball forms an efficient splint. Massage to improve the circulation is one of the chief agents by which repair may be hastened and therefore that treatment of the arm is just as important as treatment near the site of fracture.

When speaking of elderly patients who have sustained an impacted fracture of the neck of the femur, Championnière was always emphatic that more people die as the result of treatment by immobilization than of the injury. When undertaking treatment by mobilization and massage it is essential to remember that, if the patient is one of advancing years, the reflex arc is very soon and very easily tired. Hence massage must be reduced, as in children, to a minimum. Mobilization takes a part in the treatment of these fractures that nothing can replace. It is surprising how much movement can be administered, after a few minutes of gentle stroking, to a limb that is apparently absolutely fixed and rigid. The relief of the movement is very great. It indicates subsidence of the cramp and its accompanying pain. It is usual for these fractures to be impacted.

If there is no impaction, splintage or extension is required, and movement should be cautiously administered. It is true that shortening due to spasm can be reduced under the influence of massage. Hence only stroking of the entire limb and movement of the toes should be performed during the early stages. The ankle may be moved if the appliance permits. No other massage movement should be given until union is complete.

The same remarks apply to all fractures of the femur below the neck. Any movement must be left to the surgeon, though it were well if, in recent fractures, he would always try the effect of mobilization under the influence of massage before deciding upon open operation for the reduction of deformity.

When union is complete and the patient is transferred to the masseur for restoration of function, the first attemps at movement should always be performed so as to insure that no strain falls upon the site of fracture. At first, any strain exerted should be in the line of the long axis of the limb, lateral strain being added by very slow stages. A Thomas's knee-splint is the most suitable splint on which the limb can be put up if we wish

to apply massage to any case of fracture of the shaft of the femur.

The remarks made on the inhibitory action of the synovial fluid on callus formation, after fractures of the humerus into the elbow-joint, apply with equal force to those involving the knee-joint. Early mobilization is advantageous and only requires the most careful graduation.

After any fracture of the leg, massage of the thigh can be used to restore the vasomotor tone by reflex, and to assist the circulation by its mechanical effect and by toning up the muscles of the arterioles. Hence great benefit can be bestowed, although the leg itself may be fixed in plaster. If massage is ordered after fracture of the fibula above its lower third, the treatment may proceed without the fear of displacement.

The same remarks apply to fracture of the tibia alone, but movements must be much more guarded, varying from comparative freedom, corresponding to that usually applicable to fracture of the fibula, to the almost negative amount that it is possible to apply if both bones are broken. The only guide is to be found in the amount of tearing of the natural internal split—the periosteum—and this can only be estimated by the mobility of the fragments, which in turn is indicated by the amount of displacement after the accident. If there was little displacement the graduation may be rapid, and if on the other hand great displacement, mobilization must be reduced accordingly.

If the shafts of both bones are fractured, care must be exercised in the earlier stages. Until union is complete the splint must be one that is easily removable, without disturbing the fracture. This means that it is either in two or three pieces. In the former instance one side of the splint case alone must be removed at a time, and the limb should be stroked gently while the other half of the case remains in situ. If the limb rests on a posterior splint, the two lateral splints may be removed simultaneously, care being taken to see that the foot is maintained in the original position throughout treatment.

Stroking of the entire limb may be given at first, then the splints are fastened, gentle kneading of the thigh follows and the treatment terminates with the movement of the toes. When union is complete (it is more rapid towards the upper end of the tibia than towards the lower), knee and hip movements may be instituted gradually, though great care must be taken to avoid any transverse strain being placed on the site of the fracture. The limb is then placed at rest and the ankle is mobilized separately. At the earliest opportunity the patient is permitted to swing the leg over the side of the bed, and re-education in walking is begun. This should be about five days after union is complete, i. e., probably during the third week.

After fracture in the region of the ankle-joint, treatment by mobilization and massage is often of the greatest possible service. After fracture of the lower end of the fibula, assuming immediate treatment is called for, the first point is to see that kneading is performed over the external lateral ligament with sufficient firmness to arrest hemorrhage, if this is obviously progressing, and to remove any effusion that may have already taken place. A thick pad of cotton is then applied and the whole is firmly bandaged. If, however, treatment begins at a later date, surface-stroking massage should be instituted from the middle of the calf to the hip and the region of the ankle is gradually approached. Presently the stroke begins on the dorsum of the foot, it skips the ankle region and then is continued up the limb. Any area of local swelling over the external lateral ligament is next subjected to firm kneading to attempt to dissipate local effusion. Care must be taken to avoid the site of the fracture.

All movements, minute in amplitude at first, are administered to all joints of the foot and to the ankle, with the exception of eversion. The second day deep stroking and compression massage of the thigh and perhaps of the calf may be added. The third day the patient may hang the foot down and begin to wiggle it about gently at the end of the treatment. As soon as the swelling has disappeared, usually about the eighth day, exercise without weight and general re-education may be instituted.

Treatment of fracture of the internal malleolus should follow similar lines. This fracture is one which is commonly stated to fail to unite. This is probably due to the escape of synovial fluid between the fragments and mobilization affords us a potent weapon wherewith to counteract this tendency. Eversion may, of course, be given all the joints of the limb.

Fractures of the tarsal bones are serious injuries, and are often the forerunners to osteoarthritis in the joints. Treatment by mobilization and massage tends to avert this evil; but the administration of movement is often impracticable during the early stages. Fracture of the os calcis may be either incomplete or of the compression type. In the former recovery is usually complete with the proper treatment. The latter, however, even when operative intervention is instituted, usually results in permanent damage. In industry compression fracture of the os calcis usually spells the end of the individual's industrial life.

Fractures of the metatarsals, especially when they are complete, always provide certain anxiety for the surgeon. The severity of the injury varies, fracture of the first metatarsal being the most injurious, that of the fifth being least so. Disturbances in the metatarsal and longitudinal arches occur quite often, and usually are responsible for the prolonged pain and disability present in these cases.

Mobilization after massage must be given with all possible freedom to all the joints where movement does not involve any danger of displacing the fragments. When these are united, in about three weeks, all that remains is re-education in walking, which is preceded by free movement of all of the joints of the limb.

Fractures of the patella are of two varieties, the stellate and the transverse. In the former the periosteum, with its strengthening fibres derived from the quadriceps and the patellar ligament, is not ruptured and acts as a most efficient splint. Treatment should therefore be on the lines of a recent injury to the knee-joint.

If the fracture is complete and the fragments are widely separated, treatment by mobilization and massage cannot quickly insure an excellent result. The fragments in these instances should be united by suture. Plates are not satisfactory, as they do not permit of any moulding or subsequent adaptation of the fragments. If the shape of the bone is not perfect, refracture is almost a certainty. Robert Jones, in his "Injuries to Joints," records that admirable results follow the use of the walking caliper for this injury. Massage could assist to maintain the nutrition of the limb and thus hasten repair, while mobilization could be administered without fear of stretching the fibrous union, at least from a point halfway through the period that the instrument must be worn, which is about two months.

1018 East 163rd Street.

General Practice

A general practitioner is one who can lance a boil without sending you to another fellow to have it dressed.—*Minneapolis Star.*

Surgery of the Gall-Bladder*

FRANCIS ROE BENHAM, M.D.,
SURGEON IN CHIEF, ONONDAGA GENERAL HOSPITAL
Syracuse, N. Y.

THERE is no disease of the upper abdomen which demands surgical interference more often than disease of the gall-bladder. Prompted by this fact, I have chosen to ask your attention to this brief presentation.

The subject matter of this paper will deal solely with those diseases that require surgery. There are probably no organs so frequently attacked by the surgeon today as the appendix and gall-bladder. It has been said by some surgeons that a diseased and infected appendix is the exciting cause of cholecystitis, and they recommend in all cases "when possible" the removal of the appendix as well as the gall-bladder.

Due to the extreme frequency of cholecystitis the method of surgical interference is of paramount importance, namely, should you remove or leave the gall-bladder?

Cholecystectomy and Cholecystostomy

For years these operative procedures, cholecystectomy and cholecystostomy, have been discussed pro and con. Each has its place in the operative field.

A few years ago the drainage operation was the procedure of choice. To-day cholecystectomy is performed by most surgeons. Many circumstances have brought about this radical change.

Cures were not effected when there was every reason to believe they would occur. The old symptoms of pain and distress returned. Cholecystitis recurred and far too frequently gall-stones were found. Secondary operations were necessary in many cases because of a return to the original symptoms. The surgeon was not satisfied with his work; the spirit of unrest and dissatisfaction pervaded the operative procedure for cholecystitis with and without gall-stone.

Flexner tells us the function of the gall-bladder is to render the bile less irritating to the pancreas. Another function of the gall-bladder is to pump the bile into the intestine. Pressure seems necessary to carry the bile through the ring sphincter muscle of Archibald at the ampulla. This is one reason why the rhythmic contractions of the gall-bladder were deemed necessary to force the bile into the intestine. Drainage of the gall-bladder, because of adhesions to it, partially destroys this pump-like action.

Putmann says that in the past 25 years, about every sixth case, in which the diagnosis was secured beyond doubt, has been operated upon. As for the diagnosis, cholecystography (tetraiodophenophthalein intravenously or per os) has cleared the picture in many cases, or has given valuable information concerning the location of the gall-bladder; in some cases, however, it has caused confusion, due to the difficult interpretation of the roentgenograms.

The frequency with which these cases are afflicted with recurrence is, I believe, largely responsible for the wide variance of opinion regarding the operation of choice. Why should so many cases recur after operation if all the stones are removed at the time of operation? Gall-bladders and ducts in which there have been stones for a long period of time, even years, must undergo pathological changes of many kinds. The gross anatomy of a gall-bladder filled with stones or partially filled with stones changes in size and appearance. In some cases, a gall-bladder becomes twice its normal size, and the bladder wall thick and tense from frequent exacerbations of cholecystitis. Gall-stones which plug a duct cause dilatation of the duct in which they are lodged. Is it any wonder after all these changes from normal to abnormal, and from anatomical to pathological, the ducts distorted and tortuous with numerous dilatations, contractions and adhesions, that stones escape detection? Considering recurrence from this phase, it seems more than likely that many cases of so-called recurrences are not recurrences in the truest sense, but are caused by stones escaping detection at the time of the operation. Undoubtedly a good many cases of so-called recurrences are caused by a stone or stones escaping detection. On the other hand, if all the stones are removed at the operation and the causes which are necessary for the formation of gall-stones still remain what will prevent reformation?

Cholecystostomy will not permanently cure gall-stones if a diseased appendix remains to distribute infection to the gall-bladder contents and cause attacks of cholecystitis, with bile stagnation in the gall-bladder and the precipitation of bile salts. Rosenow has shown that the infection of the gall-bladder is interstitial. With every condition needed for the reformation of stones, a recurrence is inevitable. This seems to me to be a very strong argument in favor of cholecystectomy. The gall-bladder is the most common site in which the stones are found, and the cystic duct the most common duct to be affected. They also occur in the hepatic and common ducts.

Seventy-five per cent of gall-stones are found in women and in eighty per cent of these women the symptoms develop during pregnancy (Mayo).

One-fourth the diseased gall-bladders with symptoms of cholelithiasis do not contain stones.

The symptom of gall-stone colic is caused by mucous balls and thick heavy bile. It is the violent peristalsis which causes the colic.

The entire function of the gall-bladder is unsettled. Many theories have been expounded. Cases enjoy the best of health and suffer no recurrence following cholecystectomy. In view of the facts, namely, the frequency of recurrence from stones being overlooked, also the conditions needed for reformation remaining, and the gall-bladder the most common location, cholecystectomy seems to be the preferable operative procedure.

As to the mortality, cholecystectomy seems to have a larger death rate. It is undoubtedly a more serious operation.

One great disadvantage of cholecystectomy is the fact that often the gall-bladder must be used to anastomose with the duodenum or stomach. In cholelithiasis with cystic duct and common duct patulous, cholecystectomy is my choice of procedure. When a stone is found in the cystic duct which cannot be removed otherwise, I open the duct ("ductotomy"), remove stone and suture duct, and then remove the gall-bladder.

There is no place in surgery which demands a more

* Read at Scientific Meeting at Onondaga General Hospital, April 4, 1931.

complete knowledge of the surgical anatomy than the gall-bladder. In some cases, the hepatic artery passes in front of the common hepatic duct. Again an accessory cystic artery is located. In some cases we find additional hepatic ducts. Of course, a thorough knowledge of normal gall-bladder anatomy is imperative. Cholecystectomy is not without its dangers aside from abnormal anatomy. Organs in close proximity are liable to be injured and if not discovered at once may result fatally. For this reason, close inspection following cholecystectomies should always be made.

The method of removal of the gall-bladder that I follow is recommended by Robt. D. Sanders, Chamberlain, and others. The preoperative treatment is very important. I use glocose, 5 per cent solution, orally, rectally and intravenously for several days preceding operation. The abdomen is prepared the night before by shaving and scrubbing with green soap, ether and sterile dressing being applied. The patient is given 3 gr. amytal the night before to insure a restful night; one hour before operation an additional 3 grs. of amytal and 1/6 gr. of morphine are given, the amytal by mouth and the morphine hypodermatically.

Upon reaching the anaesthetic room, the patient is in a very calm and tranquil condition. The anesthetist now takes charge of patient and examines heart and lungs, takes blood pressure, etc. Gas and oxygen with very small amount of ether are administered and when anaesthetized patient is removed to operating room and table. The abdomen is again prepared as the night before except that the entire abdomen is painted with iodine. Sheets and towels are now spread on in the routine manner and the operator starts the operation by a high right rectus incision extending to below umbilicus.

Every bleeding point is seized by means of artery forceps and ligated before proceeding with the intra-abdominal part of the operation. It is important that the wound should be absolutely dry, as bleeding is very likely to go on and lead to bruising, or, in the more persistent cases, to the formation of a hematoma. The peritoneum is opened.

"The stomach and duodenum are inspected carefully and then the rest of the abdomen is rapidly reviewed by palpation. In the absence of any further disease the cecum is pulled up into the lower angle of the wound and the appendix is removed when possible. Attention is now paid to the gall-bladder, which is inspected and then palpated for stones. Finally, the left index finger is inserted into the foramen of Winslow and the common bile duct is carefully rolled between it and the thumb. When the hand is moved up and down it is possible to examine the whole length of the duct, even down to the ampulla of Vater.

"It is never necessary to open the duct in order to see whether it contains a stone; careful palpation and familiarity with the region are all that is necessary, and even the smallest of stones can be thus detected. If a stone is found it is to be removed before the gall-bladder is dealt with, as a little gentle traction of the gall-bladder assists in locating the common duct. The examination and palpation of the gall-bladder, its ducts and the abdominal viscera is of the greatest importance as many pathological conditions might pass our attention, and predispose to future trouble. Moist, hot abdominal towels are used to pack off the abdominal contents in this region, not only to render the operative field clearer, but also to protect the abdominal viscera mechanically and also against bacteria."

I next endeavor to use the classical procedure of rotating the liver into the incision. I must confess this procedure has not met with the greatest success. The gall-bladder is now grasped by the Ellis forceps and gently drawn upward and inward into plain view. At this point, may I emphasize the importance of "plain view surgery." Without this gall-bladder surgery is unsafe, unscientific and unwarranted. Using the Ellis forceps as a tractor the peritoneal covering of the gall-bladder is now opened at its superior pole and the gall-bladder carefully dissected from the under surface of the liver by means of a small moist gauze sponge wrapped around the index finger of right hand. Should the gall-bladder be much distended it is aspirated to prevent rupturing and soiling the operating field and intestines, although seldom have cases been reported where spilling gall-bladder contents caused subsequent trouble. The gall-bladder is now freed down to the cystic duct; a right angled forceps grasps the cystic duct. The cystic artery and cystic duct are located and tied off separately by means of passing a curved needle threaded with chromic gut around the cystic duct and cystic artery, the gut being double tied. Remembering the anomalies of gall-bladder anatomy referred to previously in this paper, the tied cystic artery and duct are grasped and held by forceps. The cystic duct is clamped off by forceps. Curved scissors are now used to cut off the cystic duct between the forceps and the tied cystic duct and artery and the specimen given to pathologist for gross inspection. I use no carbolic acid followed by alcohol or other cautery on stump. The stump is now drawn slightly up by means of the catgut sutures left long for this purpose and inspection can now be made to see that there is no hemorrhage; if dry the sutures are cut and the stump allowed to sink into position. Our attention is now given to the bed from which the gall-bladder has been dissected. Whatever oozing there is can be controlled by hot, moist sponges. The peritoneum which covered the gall-bladder is sutured with fine plain catgut and the incision closed as a rule without drainage.

The subject of drainage is a much discussed question and will not be taken up at this time. I have occasionally been obliged to anastomose the gall-bladder to the duodenum—"cholecystoduodenostomy." This procedure is done only after it has been impossible to keep the common hepatic duct open so that the bile might enter the intestine.

The diagnosis of cholecystitis rests first in importance on the history, second on clinical evidence and physical examination, and third on *x*-ray findings.

The function of the gall-bladder is not definitely known, but it must have an important action. Its removal, therefore, should not be done in all cases as advocated by some.

Cholecystostomy is a very valuable operation in certain cases, but not in all gall-bladder disease.

The surgical technic of cholecystostomy as regards pre-operative care and preparation and opening of abdomen is identical with the foregoing description of cholecystectomy. The gall-bladder now in view is aspirated and opened. Scissors are used to cut through peritoneal covering and gall-bladder walls sufficiently to admit large size rubber drainage tube. The tube is now pressed into gall-bladder down to cystic duct, then withdrawn about two inches; a purse string suture is now carried around the tube at the gall-bladder incision. The tube is now pushed farther into gall-bladder, thus inverting the cut edges into the gall-bladder. The tube is now fastened to gall-bladder wall by means of fine chromic gut. The tube is of sufficient length to extend outside the abdomen for 8 or 10 inches, to allow "bottle drainage." In this way dressings are kept clean and unsoiled. The abdominal wound is now closed in the usual manner. No hard and fast rule can

be laid down for gall-bladder surgery. Circumstances demand the best judgment of the surgeon, first for the safety of the patient, second the surgical method that will produce the best results for the patient. In general, I use cholecystostomy where there is a stoppage below the cystic duct irrespective of the cause of such a condition. One of the greatest objections to drainage is the establishing of a permanent fistula which demands secondary operations. Some of these sinuses drain for months and years. Some are continuous, others intermittent in action.

When the gall-bladder gives marked evidence of associated functional derangement of the stomach, cholecystectomy should be performed, whether or not stones are found (Mayo).

No absolute rule can be laid down for either cholecystectomy or cholecystostomy. Many circumstances may interfere. There is little doubt that removal of the gall-bladder is a longer operation and entails more trauma. Indications for cholecystectomy may be present, but the condition of the patient may not warrant this operation. Every case, it seems to me, must be a law unto itself. Generally speaking, cholecystectomy should be performed when the following conditions are present: first, when the stones occupy the gall-bladder; second, cholecystitis without stones; third, where wall of gall-bladder is diseased; fourth, stone in cystic duct or any obstruction to cystic duct; fifth, adhesions around the gall-bladder which interfere with its pump-like action; sixth, in the case of the strawberry or papillomatous gall-bladders; seventh, malignancy.

Cholecystostomy should be used: first in cases of pancreatitis with jaundice; second, in the very old and feeble cases or in those cases of poor physical condition; third, in those cases where the operation would be dangerous because of the inaccessibility of gall-bladder.

It seems that both operations have a very important field. It is not a case of elimination of one or the other, but a case where each operation has very definite indications, as has been shown by Deaver, Mayo, Judd, and others.

The appendix is the focus of infection of most upper abdominal diseases (Deaver).

As infection plays such an important rôle in the production of gall-bladder diseases, it behooves us in all cases to examine and remove the appendix should there be the slightest indication.

1105 East Genesee Street.

Migraine

(*Concluded from page 416*)

will tend to shorten an attack, probably by producing enough normal gastric peristalsis to overcome the effect of the retrostaltic waves producing the vomiting.

The prevention of future attacks is best accomplished by the avoidance of foods or other substances to which the patient is sensitive, the thorough eradication of all infective foci and attention to the patient's hygiene and diet. As attacks usually occur at fairly long intervals, indicating that foods causing the attacks are normally not frequently taken by the patient, there is no advantage in desensitizing the patient to these foods, especially in consideration of the well-known fact that when a person is desensitized to any substance, failure to be exposed to this substance at regular intervals thereafter will result in a return of the sensitivity. In the case of bacterial or tissue sensitivity to areas of focal infection which cannot be removed, as for instance in chonic sinus infections, vaccine therapy is indicated. Non-specific protein desensitization by intravenous or intramuscular injections of milk, vaccines or other substances, may also be of value. The use of calcium and parathyroid has been recommended, but in my hands has not proved of much value in allergic conditions in general. In menstrual migraine, desensitization to ovarian hormone, to corpus luteum or other ovarian substances concerned in menstruation, at times results in prevention of the attacks. Gastrointestinal lesions, so often found in patients suffering from migraine, require the usual medical or surgical care indicated in such conditions.

The prognosis in migraine, studied and treated as outlined in this article, is very good. Of my patients, fully 80% have been entirely relieved of attacks, although of course attacks could be produced at any time by indulgence in reacting foods, by fresh infective foci or by exposure to other causative factors. In consideration of the latter fact, that the patient may still at any time develop symptoms if again exposed to the cause of the migraine, it might be said that migraine is not curable but preventable.

Conclusions

1. The term migraine should be used only to designate attacks of headache and vomiting, often preceded by an aura and occasionally accompanied or followed by diarrhea and other gastro-intestinal symptoms, which have been definitely shown to be allergic in origin.

2. The diagnosis depends upon a history of typical attacks in an otherwise allergic individual, the finding of the allergic factor and the ruling out of an organic cause for the attacks.

3. The treatment consists of the alleviation of the symptoms of the attack and the prevention of future attacks.

88 Sixth Avenue.

Malignant Glaucoma

(*Concluded from page 423*)

pressure, but only that in this instance they apparently fluctuated together.

Since this case was studied, another apparently nonluetic case having simple glaucoma showed a very marked drop in ocular tension after a single dose of salvarsan. These two cases would suggest that perhaps it would be worth while to study this agent in a series of various types of glaucoma so as to establish its value in this disease.

23 Schermerhorn Street.

Urologic Examination of Infants and Children

According to Dr. M. F. Campbell, of New York, in *M. J. & Record*, April 15, 1931, the indications for urologic examination in infants are identical with those in adults. Although, in older children, subjective symptoms may be reliable guides, in the very young only objective signs afford clues of probable urinary tract disease.

In Dr. Campbell's experience, the indications for urologic examination in the very young have been: pyuria, 80 percent; disturbances of micturition, 15 percent; hematuria, 2 percent; tumor, 2 percent; and pain, 1 percent.

With recent advances in urologic diagnostic procedures and the development of several types of miniature cystoscopes, the technical difficulties encountered in carrying out complete urologic examinations in young patients are negligible.

It is the author's experience that it is far more difficult to convince the attending physician of the advisability of a urologic examination than to convince the parents of the child. The greatest obstacle is fear of instrumental morbidity or even mortality, but such fears are unwarranted. A study of the postcystoscopic febrile reaction in 203 infants and children examined by the author, showed a temperature rise in 12 percent, but in 80 percent of these the temperature did not rise above 100 degrees and did not last longer than 48 hours.—*Clin. Med. & Surgery.*

MEDICOLEGAL NOTES

Malpractice

I—Breaking of Needle

JAMES R. ROSEN, M.D., L. L. M.
OF THE NEW YORK BAR
New York, N. Y.

A SURGEON broke a needle while closing an incision; part of the needle remained in the body of the patient. The plaintiff instituted suit against the surgeon, maintaining that he was guilty of malpractice. At trial, the plaintiff attempted to prove his case by merely showing that the needle broke while the surgeon was closing the incision and that by reason of the fact that part of the needle remained in his body, he sustained damage. He introduced no expert testimony whatsoever in support of his contention that the surgeon was negligent.

The defendant introduced expert testimony which bore out his contention that even with the exercise of the highest degree of skill and care, surgical needles occasionally break. The expert witness for the defendant also testified that the defendant exercised the highest degree of skill and care possible.

The plaintiff did not offer any evidence in rebuttal of this testimony. The Court held that proof that the needle broke leaving part of the broken needle in the body of the patient, and its subsequent discovery by another surgeon with a resulting second operation, was incompatible with proper and successful surgery and medical treatment. Mere proof of this placed the burden of explanation upon the defendant. It was then for the defendant to prove how this could occur and still be compatible with surgery performed with the required degree of skill and care. Having introduced testimony showing that what had occurred did so occur even though the defendant exercised the highest degree of skill and care, the defendant overcame the presumption of negligence, particularly so since the plaintiff failed to rebut the evidence introduced by the defendant. The Court further said that in the absence of medical evidence to the contrary, it must be assumed that the breaking of the needle was not due to negligence.

225 Broadway.

II—Leaving Foreign Body in Abdomen

JAMES R. ROSEN, M.D., LL.M.
OF THE NEW YORK BAR
New York, N. Y.

IN an action based on the negligence of a surgeon, who allowed a sponge pack to remain in the abdomen of a patient, upon whom he had operated, the plaintiff patient in proving his case against the physician, showed that the defendant operated upon him and that the defendant allowed a sponge pack to remain in the abdomen at the close of the operation. After introducing this evidence, the plaintiff rested.

The defendant's case consisted of evidence that both he and a nurse kept count of the sponge packs used and that at the conclusion of the operation, it appeared that all of the packs had been removed. That both the defendant and his assistant had made a manual examination of the abdominal cavity before it was closed. That the packs used by the defendant were large ones and that the one found in the abdominal cavity of the plaintiff was of a smaller size and that a small pack may have been introduced into the abdominal cavity in the folds of a larger pack. Further evidence in the defendant's case was given by an expert witness who testified that the defendant used proper and advanced methods in the performance of the operation; that a more extensive search for foreign substances in the abdomen at the close of the operation would have menaced the life of the plaintiff and might have caused paralysis of the intestines; that it was proper and customary for an operating surgeon to rely on the nurse's count of sponges and that it was his opinion that the defendant had not been guilty of negligence.

The testimony of the defendant and his expert witness was not rebutted by the plaintiff. The latter proceeded on the theory that the leaving of the gauze pack in the abdomen made the lack of skill and want of care so obvious, that expert testimony in his behalf was unnecessary.

The Court held that the presence of the gauze pack in the abdomen after the operation, standing by itself, suggested that proper care had not been used, and required the defendant to offer proof in explanation. However, when the defendant's expert witness stated that proper and approved methods were used in the operation, the possible inference of negligence, because the gauze pack had been left in the abdomen, was destroyed.

225 Broadway.

Fever Therapy in Chorea

Twenty-four cases of chorea have been treated with intravenous injections of typhoid-paratyphoid vaccine as a means of producing fever. The results thus far have been good. There has been prompt cessation of the symptoms, and the course of the disease in these patients has seemed to be greatly shortened. In the cases reported the average duration after treatment was started was from eight to nine days. This treatment has been much more satisfactory than any other used at Bellevue Hospital in the Children's Medical Service. It appears to have definite advantages over phenyl-ethyl-hydantoin.—Lucy Porter Sutton, M.D., *J. A. M. A.*, Aug. 1, 1931.

Unlawful Practice of Medicine

JAMES R. ROSEN, M.D., LL.M.
OF THE NEW YORK BAR
New York, N. Y.

SECTION 1250, subdivision 7 of the Education Law, is as follows: "The practice of medicine is defined as follows: A person practices medicine within the meaning of this article, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition."

Section 1263 of the Education Law provides: "Any person, who, not being then lawfully licensed or authorized to practice medicine within the state, shall (a) practice or advertise to practice medicine; . . . shall be guilty of a misdemeanor."

In the following case, an upper court of this State decided that the defendant was guilty of a violation of the above named sections of the Education Law. The defendant was a chiropractor; this fact, however, has no bearing on the court's decision, since the only question before it was whether or not this defendant, who was not a duly licensed physician, had practiced medicine as designated by the Education Law.

The following is a part of the defendant's testimany:

Defendant—"She was escorted to me after putting on a gown, and I analyzed her spinal trouble, and she told me that she had had a fall; that she had spinal trouble or pains all along her spine. I proceeded to palpate and I recognized certain subluxations of the upper dorsal and middle cervicals, and I told her that I would not accept her case unless an *x*-ray was taken."

Further testimony was as follows:

By the Court:

Q. "You say you found a mislaid fifth vertebra here; and that was the cause of the pain in the neck?"

A. "Yes, sir."

Q. "You told her that?"

A. "Yes, sir."

Q. "You told her by pressing that back you could relieve that?"

A. "Yes, sir."

Q. "You did not know whether that would stay back on the first treatment or not, or ultimately it would?"

A. "Yes, sir."

Q. "Did you tell her that?"

A. "Yes, sir."

Q. "You told her that would eliminate the pain?"

A. "Yes, sir."

From this testimony the Court concluded, and so held, that the defendant diagnosed a physical condition and offered to treat the patient for such condition.

That he actually did render treatment for such condition appears from the following testimony given by the defendant.

Q. "Now, the adjustment that you gave her, what did that consist of?"

A. "Just a chiropractic adjustment, a snappy recoil adjustment."

Q. "And what parts of the spine did you adjust?"

A. "The fifth dorsal, the eleventh and fifth lumbar, and also the first dorsal in the neck."

The Court held that the defendant was unlawfully practicing medicine in that the defendant examined the patient, discovered certain misplaced vertebrae, advised her of this condition of her spine, and treated her for such condition with the announced intention of relieving her pain and effecting a cure.

225 Broadway.

Etiology of Gallstones

One of the perennial problems confronting the pathologist is the etiology of gallstones. These calculi ordinarily consist of cholesterol alone or in admixture with bile pigments, calcium phosphate and adventitious iron in various proportions. The condition of the bile in the gallbladder, where gallstones usually develop, appears to be uniquely favorable for the precipitation of those biliary constituents of which the calculi consist. Water is rapidly removed from the bile in the gallbladder, which has the effect of increasing the concentration of all the substances in solution that are not absorbed along with the water. Furthermore, as has been pointed out again by Elman and Taussig, liver bile which has been subjected to the influence of the mucosa of the gallbladder contains far more cholesterol per gram of hepatic tissue drained than does the bile drawn off directly from the hepatic ducts. This increase in cholesterol is much greater than can be accounted for by the desiccating action of the gallbladder and indicates that cholesterol is added to the bile by the walls of this viscus. These studies were made on dogs but, despite the circumstances apparently propitious for the formation of gallstones, it has proved extremely difficult to induce cholelithiasis in this species. It seems that other factors than concentration play an important part in the etiology of such concretions.

An explanation for the difference in readiness of formation of biliary calculi between man and the dog is offered by Andrews, Schoenheimer and Hrdina. On the basis of recent studies these investigators point out that cholesterol is held in solution in bile in the form of a complex with the bile salts, combinations which have been made in the laboratory from pure bile salts. Large amounts of these complexes have been isolated from human bile but only small quantities from dog and ox bile. When an aqueous solution of this complex is dialyzed, the bile salts pass through the membrane and the cholesterol is precipitated; the normal wall of the gallbladder does not permit the passage of bile salts through it without cholesterol. However, when the mucosa is diseased, bile salts have been shown to decrease while the cholesterol has markedly increased. A comparison of the ratio of bile salts to cholesterol in normal gallbladder bile with that in the mixed bladder bile from thirty cases of cholelithiasis at necropsy shows a much lower value in the latter group, indicating that some factor has operated to increase the cholesterol content of the bile in relation to the bile salts. The Chicago investigators believe that "cholesterol stones are due to a faulty differential absorption of bile acids and cholesterol by the abnormal gallbladder mucosa."

The efforts to elucidate the etiology of gallstones have been assiduous and long continued but, it must be admitted, they have not yielded information leading to an unequivocal or clear conception of the processes involved. Part of the difficulty has been the lack of information concerning the physiology of the gallbladder; once the normal activity is determined, abnormal circumstances can more easily be explained. The paucity of reliable data on the entire subject is an excellent argument for the value of laboratory animals in medical research; the common experimental animals do not readily develop cholelithiasis and the lack of progress in determining the etiology of this condition in man is due, in no small measure, to the inability to produce and to study it under the controlled conditions possible only with laboratory animals.—*J. A. M. A.*, Sept., 5, 1931.

MEDICAL BOOK NEWS

Edited by WILLIAM HENRY DONNELLY, M.D.

All books for review and communications concerning Book News should be addressed to the Editor of this department at 1313 Bedford Avenue, Brooklyn, New York.

DECEMBER

REVIEWS

Talks on Tuberculosis

TALKS ON TUBERCULOSIS with Patients and their friends. By John B. Hawes, 2nd, M.D. Boston and New York, Houghton Mifflin Company, 1931. 179 pages. 12mo Cloth, $2.00.

The author strives in this book to make the public recognize earlier in its course tuberculous disease of the lungs and to enlist, in the eradication of the disease, the active support of all those who have ever been affected or come in contact with it. Particularly does he stress the need of recognition and prevention in childhood.

The advantages and disadvantages of treatment at home, at nearby sanatorium or health resort, or in the special climates of far distant places are wisely discussed. So, too, are those questions of general advice to the patient, questions of diet, fresh air, forced feeding, exercise, occupational therapy, which usually require detailed, individual instruction.

The chapter on Surgery embracing the subjects of Pneumothorax, Phrenicotomy and Thoracoplasty should help remove from the patients' minds the objections or prejudices which frequently arise against these procedures and in place give added courage.

The great dangers to children of contact with people having the disease and the merits of the preventorium are justly given earnest interested attention.

A chapter of short, forceful quotations from the writings of many authors, should greatly assist the patient and enhances the value of the book. Nothing is added, however, to the value of a book intended for the general public by the six or more different comments on the slothfulness, lack of ability or interest, of members of the medical profession—the real practitioners of medicine.

T. A. MC G.

Medicine, Science and Art

MEDICINE, SCIENCE AND ART: Studies in Interrelations. By Alfred E. Cohn. Chicago, The University of Chicago Press, 1931. 212 pages. 8vo. Boards, $4.00.

Of these six essays, four were delivered as addresses before various organizations of note and the other two appeared originally in leading scientific periodicals. The author is a member of the Rockefeller Institute for Medical Research and a most distinguished investigator in clinical medicine.

The first essay discusses the difference between art and science in their relation to nature in a manner which demands nothing less than a super-culture on the part of the reader that must be about as rare as that enabling one to fathom Einstein with complete success. The reviewer tackled it bravely and hopefully but emerged badly befuddled by such abstruse matters as the relation of music to mathematics. We are willing to admit, just the same, that this essay is a literary triumph of a sort, deserving a Nobel prize, but our inferiority complex is now forever beyond compensation or cure. This first essay is unfortunately placed. It should have been the last in the book, for its Himalayan character will discourage a reading of the other five, which are wholly devoid of the impossibly esoteric slant.

In the second essay, however, on Harvey (it should have been the first), the author proves his versatility by writing a gem in the way of lucidity (versatility or double personality). It is a delightful story of the workers down to and including Harvey that gives the reader exactly the right perspective and insight into the problem of the circulation, although the reviewer resents the author's repetition of the stupid calumny regarding Cesalpinus and his great contribution to this phase of physiology—a truth which can be conceded without damage to the exclusively canonized Harvey.

In the third essay, Dr. Cohn reveals that he is not like some of his colleagues of those ivory towers—the institutes of medical research, in that he declares the task of academic medicine to be a legitimate interest in learning for its own sake, *as well as clinical investigation leading to the cure of disease.* This is most refreshng, after all we have heard about pure science and the scientist's disdain of the sick.

The fourth essay undertakes to show where the study of disease belongs in a scheme of knowledge—tied neither to practice or to research. All the workers in medicine must be free, not confined inexorably and inescapably to three cages: teaching, practising, investigation. All functions must be free to develop, all impediments to growth must be removed, the forward movement of the whole discipline must be unhindered.

But in the fifth essay, on physiology and medicine, Dr. Cohn makes us a bit uncomfortable when he argues for the idea that the study of disease is, or may be, something not necessarily coextensive with practice. Here we suspect sedition—the disdain of pure science for the sick again—the ivory tower stuff (to which we say "rats!"). Dr. Cohn can not be certified in this chapter as completely liberal.

The last essay discusses the hierarchy of medicine, a humane domain in which there must be co-operation on the part of seemingly warring factions—practice, teaching and research. So the Doctor ends on the liberal note and all is forgiven.

A. C. J.

Brain and Personality

BRAIN AND PERSONALITY: Studies in the psychological Aspects of Cerebral Neuropathology and the Neuropsychiatric Aspects of the Motility of Schizophrenics. By Paul Schilder, M.D., Ph.D. New York and Washington, Nervous and Mental Disease Publishing Company, 1931. 136 pages. 8vo. Boards, $3.50. (Nervous and Mental Disease Monograph Series, No. 53.)

An interesting group of lectures in which a sincere effort is made to close "the gap between the organic and functional." It is fairly well accepted that an interruption of the normal physiologic activity of the nervous system can be caused by psychogenic factors as well as by more precise and tangible organic causes, both of which can present an almost identical clinical picture. Certainly we are all confronted with cases with a so-called functional or psychogenic background, which at times simulate an organic disturbance so closely that in the beginning an exact differential diagnosis is almost impossible. The reviewer feels that the author in his various analogies has made out a good case in drawing together the threads which unite the organic and psychogenic.

However it is felt that the author has not profited by continuing the lecturing style in presenting the many details necessary to "putting over" the points of his thesis. Too often are illustrative cases introduced into other descriptive cases, confusing rather than clarifying the subject. A great deal of pleasure was experienced in reviewing this work. This book will prove of interest to many. The "pure organicist" hitherto intolerant towards psychogenic problems, should find his interest awakened and discover that his prejudice was based on ignorance. Likewise the psychiatrist and analytic interpreter will reappreciate the important fundamental organic problems.

HAROLD R. MERWARTH.

Dietetics and Nutrition

DIETETICS AND NUTRITION. By Maude A. Perry, B.S. St. Louis, C. V. Mosby Company, 1930. 332 pages. 12mo Cloth, $2.50.

"It is my aim," says the author in her preface, "to present scientific and technical material in plain and simple language to meet the needs of schools, training schools for nurses, graduate nurses, physicians, teachers, and all others interested in personal and public health problems." Her book thus falls more or less into the purely text-book group, in which she considers in the vaious chapters food, in all of its phases, the

different types of foods, their adjuncts, their care, preservation, and cooking, nutrition and metabolism in general, and the diets in various diseases. Her wide experience in the hospital and the class-room have given her an ample opportunity to acquire information on both the clinical and scientific side. It is an astonishing amount of fact which such a book has to offer, and in this instance the arrangement and sequence of the chapters, including a list of pertinent questions at the end of each chapter, as well as the usual numerous diet regimes and tables make it a particularly useful book for the student of dietetics.

L. C. JOHNSON.

The Devil

THE DEVIL. An Historical Critical and Medical Study. By Maurice Garcon and Jean Vinchon. Translated by Stephen Haden Guest from the 6th French Edition. New York, E. P. Dutton & Company, Inc., 1930. 288 pages. 8 vo. Cloth, $3.50.

A discussion of the Prince of Evil rather etiological and symptomatical than theological. A biography of an orthodox character, this book cannot fail to interest those who have time to consider the origin and development of a serious conception of the mind of man dealing with evil in its perfection. An exhaustive study.

W. S. H.

Communicable Disease Control

COMMUNICABLE DISEASE CONTROL. Report of the Committee on Communicable Disease Control, George H. Bigelow, M.D., Chairman. White House Conference on Child Health and Protection. New York, The Century Company, (c. 1931). 243 pages. 8vo. Cloth, $2.25.

This publication contains the Report of the Committee on Communicable Disease Control of the White House Conference on Child Health and Protection.

The prevalence of these diseases as to morbidity and mortality particularly in the age of childhood, and the factors to be considered in their control are accompanied by a considerable amount of statistical data in the form of tables, from the various States illustrating the general trends. The current practices of control are reviewed and then the procedures recommended for the control of the various communicable diseases are described at length.

The book is the result of an extensive survey and study made by a group of experts, and the recommendations given therefore have an official and authoritative character.

The study made was a much needed one, and the results of the survey as published will therefore be of value in the forceful impetus it will give to the promotion of more uniformity throughout the country in the procedures employed in the control of these diseases, indicating also the present trends and the points where further investigation is needed.

The Committee is to be congratulated on the successful completion of this important work.

JOSEPH C. REGAN.

The Manic-Depressive Psychosis

THE MANIC-DEPRESSIVE PSYCHOSIS. By Helge Lundholm, Ph.D. Durham, Duke University Press, 1931. 86 pages. 8vo. Paper, $1.00. (Duke University Psychological Monographs, No. 1.)

This monograph presents a theoretical explanation and discussion concerning the manic-depressive psychosis. The discussion falls into three parts, the first which is intended to prepare for the analysis of the manic-depressive symptoms, the second which deals with the manic-depressive symptoms and with a number of reactions which are accessory to or superimposed upon these directly disintegrative symptoms, and the third which deals with the three "imperial moods" of the manic-depressive psychosis, the feeling of omnipotency, the feeling of inadequacy, and the feeling of unreality.

The subject is presented in an authoritative manner, and the book should prove of great value to psychiatrists and to the past masters in psychological theory.

FREDERIC DAMRAU.

Egypt: The Home of the Occult Sciences

EGYPT: The Home of the Occult Sciences with Special Reference to Imhotep, the Mysterious Wise Man and Egyptian God of Medicine. By T. Gerald Garry, M.D., M.Ch. London, John Bale, Sons & Danielsson, Ltd., 1931. 93 pages. 12 mo Cloth, 7/6.

Among the ancients magic was a very real thing and "could not be disassociated from religion." While magic may be regarded as a crude precursor of religion the objects for which magic was invoked were in many respects the same as those which in our day serve to emphasize the need for prayers. And so while magic may be banned from present-day religious rites and practices, the prayers and miracles of the modern era serve similar purposes. The amulets of olden times have their counterparts in the relics of today.

From a perusal of this little book one learns that the frailties which characterized the ancients are also the properties of modern mankind.

EMANUEL KRIMKSY.

Insomnia

INSOMNIA: An Outline for the Practitioner. By H. Crichton-Miller, M.A., M.D. London, Edward Arnold & Company; New York, Longmans, Green & Company, 1930. 172 pages. 8vo. Cloth, $4.20.

This book has been written with the purpose of conveying to the average practitioner an idea of the problem of insomnia.

After discussing in general terms the mechanism of sleep the author sums up by stating, "We may say that insomnia consists in a failure to achieve to a normal degree, and under normal circumstances that state of mineral activity of mind and body which we call sleep."

This is followed by a chapter on "General Treatment" including considerations of the patient's environment, proper selection of a nurse, massage, electrical therapy, and diet. In turn are discussed the physical aspects of sleep and drug treatment. The psychological point of view concerning sleep is presented, with the application of the various principles of Behaviorism, of Freud, and of Jung to the question. The book ends with a discussion of psychotherapy.

The author's style is interesting and the content easily grasped. There is a fairly complete bibliography.

STANLEY S. LAMM.

Modern Proctology

MODERN PROCTOLOGY. By Marion C. Pruitt, M.D., L.R.C.P. St. Louis, The C. V. Mosby Company, 1931. 404 pages, illustrated 8vo. Cloth, $8.00.

This monograph represents all the essential features of modern proctology in a concise masterly manner.

The etiology, pathology and the treatment of common rectal diseases are most creditably described and make the book a valuable, practical treatise for the specialist and general practitioner. The absence of irrelevant material is most conspicuous.

MARTIN L. BODKIN.

What the Public Should Know About Childbirth

WHAT THE PUBLIC SHOULD KNOW ABOUT CHILDBIRTH. By Walker Bourne Gossett, M.D. Minneapolis, The Midwest Company, 1931. 200 pages. 12 mo Cloth, $2.00.

Justly concerned with our high maternal mortality, Gossett has assembled the views of many authorities, and uses their ideas to strengthen his own point of view. The book is largely quotations. Curiously, the author believes that Caesarean section should be done by the general surgeon only, and not by the obstetrician or gynecologist. A queer book for the general public, and not to be recommended for the expectant mother, for whom a chapter is added; its frankness would cause her great alarm.

C. A. G.

The Medical Record Visiting List for 1932

THE MEDICAL RECORD VISITING LIST OR PHYSICIANS' DIARY FOR 1932. Revised. New York, William Wood & Company, (1931), 16mo Flexible cloth, $2.00.

The long proved usefulness of this small volume makes us welcome its reappearance after careful revision of contents.

J.

The Psychology of Insanity

THE PSYCHOLOGY OF INSANITY. By Bernard Hart, M.D., F.R.C.P. Fourth edition. New York, The Macmillan Company, 1931. 191 pages. 16mo Cloth, $1.00.

This is a compact, pocket-sized volume of 191 pages. The introduction is a brief survey of the development of psychopathology referring to the influence of Charcot, Janet and Freud, with particular attention to the far-reaching effect of psychoanalysis upon our interpretation of mental disease. Chapter One shows the slow, uncertain progress through the ages of our knowledge of the nature of mental reactions. The bulk of the book deals with the fundamental mechanisms of mental disorders such as dissociation, complexes, conflict, repression, projection and fantasy formations. The book should be of particular interest and help to beginners in the study of psychiatry. Even more advanced students with their more adequate knowledge of these fundamentals will find it not altogether without interest.

A. E. SOPER.

Cancer and Race

CANCER AND RACE. A Study of the Incidence of Cancer Among Jews. Conducted under the auspices of the Jewish Health Organization of Great Britain. By Maurice Sorsby, M.D., F.R.C.S.E. New York, William Wood and Company, 1931. 120 pages, 8vo. Cloth, $3.00.

The 1890 impression that Jews were immune to cancer has long ago been shown to be a myth. The author has tried to reach a modern concept by analysis of cancer statistics from some of the largest European cities.

He proves, that the total distribution of carcinoma among Jews presents but little difference from that among non-Jews; that although the sex distribution have shown variations in different

communities, it is not a factor of great significance in a consideration of the total incidence.

The distribution of cancer according to organ involved revealed some noteworthy facts; that cancer of the uterus has a low incidence among Jews; that the reverse is true of carcinoma of the ovaries; and that carcinoma of the penis has never been reported in a Jew. HARRY MANDELBAUM.

What the Hospital Trustee Should Know

WHAT THE HOSPITAL TRUSTEE SHOULD KNOW. By John A. McNamara. Chicago, Physicians' Record Company, 1931. 83 pages. 8vo. Cloth, $1.50.

In this convenient little volume Mr. McNamara gives us a condensed and highly practical handbook of the fundamentals of organizing and operating a hospital. From his impartial position as Executive Editor of "Modern Hospital" he has had unusual opportunities to study both sides of the picture, coming in contact as he does, equally with trustees and superintendents.

Although what he says may seem almost elementary to those familiar with the hospital field, it is extraordinary how few trustees seem to have grasped these first principles of hospital management, and especially the necessity of applying business methods to hospital problems. It would be a good idea if every newly-appointed trustee were requested to spend an hour studying Mr. McNamara's book to gain an initial understanding of what his job was all about.

The Organization Chart and Articles of Incorporation which Mr. McNamara includes are valuable guides by which any new hospital, or one undergoing a process of re-organization, can safely steer its course. The chapter on the new building program gives most excellent advice on the importance of founding such a program on a thorough community survey and study of what work the hospital should do, made by a well-qualified consultant.

Mr. McNamara emphasizes again the difficulties of the superintendent's position and the necessity of selecting a person of the right calibre and experience, the salary paid being of secondary importance as compared with securing someone big enough for the job.

Mr. McNamara's informal style and humorous touch light up what otherwise might be pretty dry reading. The hospital trustee (and may there be many of them) who carries this little book around in his pocket will find its contents entertaining as well as extremely profitable. CHARLES F. NEERGAARD.

Bedside Interpretation of Laboratory Findings

BEDSIDE INTERPRETATION OF LABORATORY FINDINGS. By Michael G. Wohl, M.D. St. Louis, The C. V. Mosby Company, 1931. 321 pages, illustrated. 8vo. Cloth, $6.00.

This book answers the need of the practitioner for a manual which properly evaluates the importance of the numerous clinical pathological tests in a brief way so that these tests can be used as an aid in bedside diagnosis. Since only the simplest tests are described, it spares the busy practitioner the trouble of wading through numerous other tests for the same purpose. It certainly attains the purpose of being a middle ground between the practitioner and the clinical pathologist. In spite of brevity, this book contains the most recent laboratory tests which are of practical value, such as the Aschheim-Zondek test and the blood tests for paternity. SILIK H. POLAYES.

BOOKS RECEIVED

Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgement of receipt has been made in this column.

AN ENTIRELY DIFFERENT WOMAN. By Georg Fröschel. Translated by Maida C. Darnton. New York, Brentano's Inc., 1931. 280 pages. 12mo Cloth, $2.00.

HEALTH FOR TRAVELERS. Hygiene and Health Preservation in the Tropics, Orient, and Abroad. By the Staff of the Pacific Institute of Tropical Medicine within the George Williams Hooper Foundation for Medical Research of the University of California. Edited by Alfred C. Reed, M.D. San Francisco, J. W. Stacey, Inc., 1931. 239 pages. 12mo Cloth, $3.00.

THE SURGICAL CLINICS OF NORTH AMERICA. Volume 11, Number 5 (Pacific Coast Surgical Association Number) October, 1931. Issued serially, one number every other month by the W. B. Saunders Company, Philadelphia and London. Per Clinic Year (6 nos.) Paper, $12.00; Cloth, $16.00.

MIDWIFERY FOR NURSES. By Douglas Miller, M.D., F.R.C.S. London, Edward Arnold & Co.; New York, Longmans, Green & Co., 1931. 256 pages, illustrated. 12mo Cloth, $2.40.

THE TRUTH ABOUT BIRTH CONTROL with a Bibliography of Birth-Control Literature. By Norman E. Himes. New York, The John Day Company, [c. 1931]. 28 pages. 12mo Paper 25c. (The John Day Pamphlets No. 4.)

THE DOCTOR LOOKS AT LIFE AND DEATH. By Joseph Collins. New York, Farrar & Rhinehart, Inc., [c. 1931]. 315 pages. 8vo. Cloth, $3.00.

ESSAYS ON MARRIAGE. By Frederick M. Harris. New York, Association Press, 1931. 208 pages. 8vo. Cloth, $2.00.

THE INSECT MENACE. By L. O. Howard. New York, The Century Co., [c. 1931]. 347 pages, illustrated. 8vo. Cloth, $3.50.

THE CASE AGAINST BIRTH CONTROL. By Edward Roberts Moore, Ph.D. New York, The Century Co., [c. 1931]. 311 pages. 12mo Cloth, $2.50.

JURISPRUDENCE FOR NURSES. Legal Knowledge Bearing Upon Acts and Relationships Involved in the Practice of Nursing. By Carl Scheffel, Ph.B., M.D. New York, Lakeside Publishing Company, [c. 1931]. 166 pages. 8vo. Cloth, $2.00.

THE CARE AND FEEDING OF ADULTS WITH DOUBTS ABOUT CHILDREN. By Logan Clendening. New York, Alfred A. Knopf, 1931. 317 pages. 12mo Cloth, $2.50.

INFECTIONS OF THE KIDNEY. By Meredith F. Campbell, M.D., F.A.C.S. New York, Harper & Brothers, 1931. 343 pages, illustrated. 12mo Cloth, $3.00. (Harper's Medical Monographs).

THE NURSE'S MEDICAL LEXICON. For the Use of Graduate and Student Nurses, of Premedical and Dental Students, and of the General Public. By Thomas Lathrop Stedman, A.M., M.D. New York, William Wood and Company, 1931. 629 pages. 8vo. Cloth, $2.00.

THE MEDICAL RECORD VISITING LIST OR PHYSICIANS' DIARY for 1932. Revised New York, William Wood & Company, [1931]. 16mo Flexible cloth, $2.00.

SIMPLIFIED DIABETIC MANAGEMENT. By Joseph T. Beardwood, Jr., A.B., M.D. and Herbert T. Kelly, M.D., F.A.C.P. Philadelphia, J. B. Lippincott Company, [c. 1931]. 191 pages, illustrated. 12mo Cloth, $1.50.

SURGICAL PATHOLOGY OF THE DISEASES OF BONES. By Arthur E. Hertzler, M.D. Philadelphia, J. B. Lippincott Company, [c. 1931]. 272 pages, illustrated. 8vo. Cloth, $5.00. (Hertzler's Monographs on Surgical Pathology.)

FUNCTIONAL DISORDERS OF THE GASTROINTESTINAL TRACT. By William Gerry Morgan, M.D., F.A.C.P. Philadelphia, J. B. Lippincott Company, [c. 1931]. 230 pages, illustrated. 8vo. Flexible imitation leather, $5.00. (Everyday Practice Series—edited by Harlow Brooks, M.D.)

HEADACHE. By William H. Robey, M.D. Philadelphia, J. B. Lippincott Company, [c. 1931]. 234 pages. 8vo. Flexible imitation leather, $5.00. (Everyday Practice Series—edited by Harlow Brooks, M.D.)

HERVORRAGENDE TROPENARZTE in Wort und Bild. By Dr. Med. G. Olpp. München Aerztlichen Rundschau Otto Gmelin, 1932. 446 pages, illustrated. 8vo. Paper, Marks 30.

HOW'S YOUR BLOOD PRESSURE? By Clarence L. Andrews, M.D. New York, Macmillan Company, 1931. 225 pages. 8vo. Cloth, $2.50.

A NON-SURGICAL CONSIDERATION OF PROSTATIC ENLARGEMENT including a lecture on The Myth of the Bladder Neck Bar. By Edwin W. Hirsch, M.D. St. Paul, Minn., Bruce Publishing Company, 1931. 79 pages, illustrated. 8vo. Boards, $2.00.

MIND SURGERY. By Daniel Boone Herring. Holyoke, Mass., The Elizabeth Towne Co., Inc., [c. 1931]. 112 pages. 12mo Cloth, $1.00.

Correspondence

Ph.D. and D.P.H. Leadership

Olean, N. Y., November 5, 1931.

Horace Greeley, M.D.,
Brooklyn, N. Y.

My dear Doctor Greeley:

I have just read with a great deal of interest the copies of your correspondence with the New York State Education Department, as printed in the November 1931 issue of the MEDICAL TIMES AND LONG ISLAND MEDICAL JOURNAL.

There is no question but that when these Ph.D. chaps speak people get the impression that they are medical men speaking for medical men. For a long time I myself had the idea that Lewinski-Corwin was a Doctor of Medicine.

But to the category of medical-minded Ph.D. should be added the D.P.H., or Doctor of Public Health, who, without a medical degree, speaks learnedly on medical matters, and frequently presents himself as the oracle of the medical profession. I do not believe, for instance, that C.-E. A. Winslow, D.P.H., of Yale, has a medical degree; at least I've never seen it after his name. Nevertheless he is one of the most prolific of scientifico-popular medical writers and talkers.

Sincerely,

JOSEPH P. GAREN, M.D.

Editor's Note.—Interesting in this connection is the fact, according to the Dean of the Columbia University Medical School, that but 10 per cent of the country's public health personnel is drawn from the medical profession.

Diabetes

Tendency is to give more carbohydrates.

Contemporary Progress

Editorial Sponsors

Neurology

Sydenham's Chorea

R. W. Waggoner (*American Journal of Medical Sciences*, 182:467, October, 1931) reports a study of 125 cases of Sydenham's chorea from the University of Michigan Medical School; the ratio of females to males was approximately 2:1. In about 33 per cent. of these cases there was a history of rheumatic fever before the onset of the chorea, and in an additional 15 per cent., some evidence of cardiac disturbance indicating rheumatic infection. In the remaining cases there was a history of some other acute infection preceding the chorea in all but one case. The most common infections were measles and scarlet fever. In the one exception, there was an impacted tooth, removal of which relieved the symptoms of chorea. The degree of involvement varied in these cases from one to two muscle groups to practically the entire body. Most of the cases showed involvement of only one side of the body at first, and in a considerable number the disease remained unilateral, in others becoming bilateral. Many of the patients showed mental symptoms, chiefly emotional instability, frefulness, peevishness and unreasonableness. Sleep was often disturbed by unpleasant dreams, the content of which was not remembered. Examination showed a diminution and in some cases complete absence of tendon reflexes. The most important signs were those of incoordination of movement, particularly noticeable in cases with hypotonia. The author has found that the most important factor in the treatment of Syndenham's chorea is absolute mental and physical rest, which is best obtained by removing the patient from his home to a hospital or other institution where his environment can be strictly controlled. The number of drug treatments suggested is evidence that none is entirely satisfactory. Removal of foci of infection should be done, but this should be delayed, until the patient has become accustomed to his new environment, until any fever that may be present has disappeared and until there has been a diminution in the choreic movements.

COMMENT:

The tendency of chorea of Sydenham's type to be unilateral and frequently to remain unilateral has also been noticed by the reviewer in the cases of Sydenham's chorea which have come to our attention in the past six years. Most of these patients were ambulatory dispensary patients. As also commented on by Dr. Waggoner several simulated a hemiplegia because of the extreme loss of associated movements and the presence of marked hypotonia.

The psychic upset of these patients has been noted previously by Dr. Waggoner in a separate article. The association of slight twitching movements with a personality change is often ascribed to an impish perverse behavior by unthinking parents, particularly so since in many instances there is no obvious accompanying febrile state, which always carries with it the connotation of a real sickness. If in every case of chorea, the mental phase is investigated carefully and routinely, almost without exception a story of an alteration of personality will be elicited from the parents. In many cases the patients are conscious of a different behavior. The following instance is an example of this point. An Italian boy, an only child, a typical "mamma's boy", "never spanked", always polite and retiring, suddenly took to having tantrums, objected strenuously to his mother's requests, and became careless in his dress. For the first time in his life this boy was punished. The boy was aware that something was wrong. He told his mother that she would be sorry and that he could not help his trouble. You can picture the highly emotional mother when she discovered her mistake.

One attack of chorea does not confer immunity. Its recurrence is apt to be very distressing, both to the patient and physician. The tendency to recur is found in the "rheumatic group."

H. R. W.

Experimental Production of Degeneration in the Spinal Cord

E. Mellanby (*Brain*, 54:247, September, 1931) reports experiments on puppies, in which it was found that diets containing a large amount of cereal other than yellow maize and deficient in vitamin A or carotene produced degenerative changes in the spinal cord in the form of demyelination of the nerve fibers. The addition of 2 to 5 gm. of ergot daily to such a diet hastens and intensifies these degenerative changes. The presence in the diet of any rich source of vitamin A such as liver oil, whole milk, butter or egg yolk or of some source of carotene such as green vegetables or carrots, or carotene itself prevents or diminishes these spinal cord changes even when ergot is eaten. Even in animals showing symptoms of these degenerative spinal cord changes the addition of vitamin A and carotene to the diet results in marked improvement. These results suggest that deficiency of vitamin A or carotene play a rôle in the development of pellagra or at least of its nervous manifestations. It is suggested that a double deficiency is responsible for pellagra, the skin changes resulting from B_2 deficiency and the nervous changes from an A deficiency. The author also notes that a partial deficiency of vitamin A and carotene is common in the general diet of highly organized communities; this deficiency is not so complete as to cause degenerative changes in the spinal cord such as were found in the experiments described, but the possibility is suggested that such partial deficiency may be responsible for the slighter, but more frequently seen, abnormalities of the nervous system.

COMMENT:

A very carefully prepared article well worth reading

in the original. It stresses the value of fully balanced diets in treating the chronic diseases of the central nervous system.

In the September issue of this journal, we called attention to an article prepared by A. Goddall—J. K. Slater in the *British Medical Journal* of May, 1931, in which liver feeding was used in the treatment of a few cases of multiple sclerosis with apparently very favorable results. It is noteworthy that in multiple sclerosis, an exacerbation is associated with a loss of weight, while a remission is concurrent with an improvement in weight and general well being. Consequently the gospel of fatness is preached in these cases.

As noted in the above abstract changes in the nervous system in human beings are found in well known deficiency diseases. It is now well known that in the cord changes of pernicious anemia, a marked improvement in the subjective state of the patient follows careful dietary treatment. In the early cases without definite destructive changes we find an improvement in the objective clinical findings.

The facts elicited in these carefully conducted animal experiments may well be applied with profit to many of the vague chronic diseases of the central nervous system.

H. R. M.

Malarial Therapy and Cerebral Lesions in General Paralysis

E. Paulian and I. Bistriceanu (*Revue neurologique*, 38:293, September, 1931) report pathological studies on 9 cases of general paralysis in which death occurred during or soon after malarial treatment. In all 9 cases the most marked pathological lesions were found in the frontal lobes. There was considerable perivascular infiltration with lymphocytes and plasmocytes predominating in the subjects that had died during malarial treatment or within a short period after completion of treatment. In those who had died a month or more after malarial therapy, the perivascular infiltration was less intense and lymphocytes predominated indicating that the process had become more benign. The spirochetes in 2 subjects who had died soon after the malarial inoculation were fairly numerous but showed some degenerative changes. In 5 cases the spirochetes were few, all showed degenerative changes, and there was a considerable detritus resulting from destruction of spirochetes. In 2 cases no spirochetes were found. A study of the lesions of the nerve cells showed evidence that the malarial therapy had arrested or inhibited their progressive advance.

Treatment of Morphinism

J. Jacobi (*Monatsschrift für Psychiatrie und Neurologie*, 80:221, Sept., 1931) reports the treatment of morphinism by the administration of glucose and insulin. The glucose was given either intravenously—25 c.c. of a 50 per cent. solution, or by mouth—30 to 50 gm. daily. Insulin was given subcutaneously in doses of 20 units three times a day or 30 units twice a day. This method of treatment was adopted because a study of the blood sugar curves in morphine addicts indicated a disturbance of carbohydrate metabolism and a hepatic insufficiency. This treatment was combined with the use of sedatives—bromides, somnifen and luminal—and in some instances with choline derivatives. In these cases the morphine was withdrawn at once. In most cases there were no withdrawal symptoms, or only very slight symptoms; there was no desire for morphine, even on the critical third day. The author believes that no morphine addict is absolutely free from the danger of recurrence with any method of treatment; but has found that the method described reduces the liability of recurrence. It has no ill effects and maintains the patient in better condition than any other method tried.

Cerebral Lesions In Purulent Meningitis

F. Wertham (*Archives of Neurology and Psychiatry*, 26:549, September, 1931) notes that during the microscopic examination of the brain of a patient dying of purulent meningitis, he found wide-spread lesions in the parenchyma. This led him to a more careful study of such changes in fatal cases of purulent meningitis; a total of 24 cases of various types were examined. There were 10 adults and 14 children in this series; and in all the diagnosis was verified or established by the autopsy. In the majority of these cases paled areas could be seen with the naked eye in the parenchyma of the brain, in sections stained with the Nissl stain, not only near the places where there was pronounced meningeal infiltration, but also at a distance from the site of meningeal infiltration—in the deeper layers of the cortex, the white substance and the basal ganglia. Microspoic examination of these areas showed that in such lesions a large number of nerve cells and glial cells had disappeared and other cells were pathologically changed; the underlying tissue in these areas had also lost its normal staining reactions. In some cases alterations of the nerve cells occurred diffusely and not in definite relation with focal areas. The cerebellum was also frequently involved with the Purkinje cells showing marked changes. Diffuse reactions of the glia were most marked in the first layer of the cortex; both proliferative and regressive changes were noted. The inferior olives showed involvement in almost every instance, the cells showing various types of pathological change. Near the outer surfaces of the brain there were encephalitic changes with an infiltration of blood-vessels; on the inner ventricular surface of the brain these changes were more marked, with heavy infiltration of the blood-vessels with leucocytes and subependymal glial proliferation consisting of large glia cells to a great extent. In practically all cases both the meningeal and intracerebral blood-vessels showed pathological changes not due merely to infiltration but to definite changes in the vessel walls which were thickened, showed increase of the endothelial cells and in some instances a breaking down of the elastica interna. The paled areas in the cortex were often found to be in definite relationship to blood-vessels. The author concludes that in purulent meningitis, most of the lesions in the parenchyma of the brain are on a circulatory basis, toxic factors probably playing a subordinate part. The clinical significance of the cerebral lesions in purulent meningitis is difficult to estimate; but the author has noted that in the acute stage of the disease patients frequenly show marked overactivity which leads to their admission to psychopathic wards.

Physical Therapy

Temperature Distribution With Different Types of Diathermy Electrodes

A. Hemingway and D. Collins (*Archives of Physical Therapy*, 12:517, September, 1931) report a study of the temperature distribution in diathermy treatments with the different types of electrodes used. There are two common types of electrodes—the thin electrodes of pliable metal that can be pressed against the part of the body to be treated to make a good electrical contact; and the cotton pad electrodes covered with copper gauze and soaked in some electrolyte solution before being applied. The

authors' experiments were carried out on dogs under light anesthesia; copper advance thermocouples were used for measuring temperature. It was found that greater cutaneous heat is obtained with the metal electrodes; greater increase of temperature in the muscles with the pad electrodes. With the metal electrode a more rapid rise of temperature takes place during the early part of diathermy treatment. The greater calorific effects of the metal electrodes, as observed by Bordier, the authors believe, are a purely cutaneous effect, the greater cutaneous heat produced by an electrode of this type stimulating the cutaneous regulatory processes more strongly.

Ultra-Violet Irradiation in the Treatment of Fractures

M. Ponzio (*Radiology*, 17:792, October, 1931) reports that experiments on animals carried out at the Hospital Humbert I of Turin, Italy, showed that intravenous injection of calcium chloride solution combined with exposure of the site of fracture to ultra-violet rays definitely hastened callus formation and fracture repair. Neither calcium alone nor the ultra-violet irradiation alone had the same effect. The effect of the combined treatment was evident at various stages, but was especially well marked in the terminal period of fracture repair. On the basis of these experiments, combined treatment with calcium and ultra-violet ray irradiation was given hospital patients with fractures, who showed retarded or defective callus formation. In these cases the calcium was given either by mouth or by hypodermic injection. Irradiation with the ultra-violet light was given daily over the site of the fracture. In all these cases there was a marked activation of the process of repair during the course of the combined calcium and irradiation treatment, not only in patients who showed a definite calcium deficiency but also in those in which deficient calcification was apparently due to some general dystrophic process.

Effects of Concentrated Ultra-Violet Light on the Skin

S. Lomholt of the Finsen Institute, Copenhagen (*British Journal of Dermatology and Syphilis*, 43:385, August-September, 1931), in studies on the effect of ultra-violet rays on the skin, has found that those rays with wave lengths from 3200 to 3600 A. U. have the most active biological effect. On the basis of these findings a new carbon arc light for the Finsen treatment of lupus and other skin disease has been constructed which concentrates these rays, and is also screened with color-filters so as to eliminate the infra-red and some of the rays of the spectrum. The characteristic effect of the ultra-violet irradiation of this type on the skin is its elective destruction of the cellular elements, especially pathological cells, whereas it has little effect on the supporting tissue and its fibrils. "This makes it possible for the skin to regenerate in its original form." This new lamp, like the original Finsen lamp, has been used chiefly in the treatment of lupus and other forms of skin tuberculosis. It has also been used with good results in cases of neurodermatitis with severely itching plaques; in naevus flammeus; in xanthoma of the eyelids; and in atrophy of the skin due to exposure to the *x*-rays. In the latter condition short exposures to this concentrated arc light produce a weak reaction in the atrophic skin followed by comparatively active regeneration with new formation of blood-vessels.

Radiotherapy of Dry Gangrene by Irradiation of the Suprarenal Region

A. Zimmern, J. A. Chavany and R. Brunet (*Presse médicale*, 39:1061, July 15, 1931) report the treatment of dry gangrene due to obliterating arteritis of various types by *x*-ray irradiation of the suprarenal region. They have found that this treatment results in restoring the normal color and temperature of the affected extremity very rapidly, in areas that have not become definitely necrotic. In necrotic areas, healing is more gradual, taking place from the depth of the wound, the gangrenous crust finally dropping off or being easily removed. As a rule the pain is usually relieved after a few treatments. The authors do not advise the use of either wet dressings or ointments for the local treatment of the lesions. A dry antiseptic powder is applied. Four treatments of 400 R each over four different fields are given and this series is repeated as indicated. The effect of this irradiation may be chiefly to diminish the secretion of the suprarenals, or it may act primarily upon the sympathetic system with its important centers in close relationship to the suprarenals. The authors are of the opinion that these two modes of action are not mutually exclusive. The effects of the *x*-rays in these cases may be attributed to both their action upon suprarenal function and their action upon the sympathetic nervous system.

Roentgen-Ray Treatment in Acne Vulgaris

L. W. Lord and J. E. Kemp (*Southern Medical Journal*, 24:867, October, 1931) report 247 cases of acne vulgaris treated with the *x*-rays. This treatment consisted in weekly exposure to one-quarter skin unit of unfiltered *x*-rays. An astringent lotion containing sulphur precipitate, powdered camphor and powdered tragacanth in lime water was used. If an erythema with a feeling of dryness of the skin developed, as occured in some cases after the fourth or fifth *x*-ray treatment, the use of the lotion was stopped for a week, and it was then employed at longer intervals. Also if this erythema occurred, or any sign of ephilide formation, two layers of chamois were interposed between the patient's face and the *x*-ray tube. In this way no ill effect of the treatment was noted in any case. A follow up of the 247 cases showed that 184, or 74.5 per cent., reported a complete cure or marked improvement. Sixty-three reported a relapse; in 31 the relapse was mild and in 32 it was severe, but not always of so great a degree as in the first attack. In these 63 cases, further *x*-ray treatment was given in only 12 instances, other methods being employed in the majority. In 124 cases a carefully prescribed diet was followed, and in 123 cases diet was not prescribed or was not followed. The percentage of cures was definitely higher in those with dietetic treatment than in those without such treatment. In this series of cases, treatment was stopped when the lesions of acne cleared up; in this way the number of treatments varied from five to eighteen; it was found that the lower the dosage of *x*-rays required to clear the condition, the greater the chance the patient had of being permanently cured. This finding indicates that prophylactic *x*-ray treatments following relief of symptoms are not desirable.

Sodium Chloride Metabolism in Hyperthermia

F. Walinski (*Zeitschrift für die gesamte physikalische Therapie*, 41:111, September 25, 1931) reports a study of the sodium chloride metabolism in cases in which hyperthermia was induced by hot baths and packs for therapeutic purposes. A constant diet was used with 4 gm. salt during the period of observation including three days before and two days after the induction of the hyperthermia. In the period before the induction of hyperthermia the sodium chloride excretion corresponded to the intake. In the period of hyperthermia there was a definite increase in the sodium chloride content of the

blood, which reached its maximum approximately at the time of the maximum temperature. The sodium chloride excretion during the day on which the hyperthermia was induced was much reduced. The sodium chloride thus retained was excreted within the next forty-eight hours. The intravenous injection of sodium chloride without the induction of hyperthermia in these patients did not result in any sodium chloride retention. The quantity injected was practically entirely excreted within twenty-four hours. The retention of sodium chloride, therefore, must be regarded as a specific effect of the hyperthermia.

Public Health

Carrier Infection Among Family Associates of Diphtheria Patients

Y. Kusama and J. A. Doull (*Journal of Preventive Medicine,* 5:369, September, 1931) note that since the early days of bacteriology it has been recognized that persons in close contact with diphtheria patients are very likely to be carriers of diphtheria bacilli. Hence in many health departments the search for such carriers and their isolation is an important measure for the control of diphtheria. In spite of this published data on the frequency of infection among such family contacts are not numerous. The authors accordingly present the records of family contact carriers obtained during the general epidemiological studies of diphtheria in Baltimore in 1920 to 1925 inclusive. There were 3,449 family contacts from whom cultures were made on the report of the primary case in the family, excluding those who developed clinical diphtheria. Of these 11.7 per cent. were found to harbor diphtheria bacilli. Children under ten years of age showed a higher frequency of carriers than older persons. Of 346 persons with positive primary culture, who were cultured later, usually after an interval of ten days, 44 per cent. were found to be still positive. For those under ten years of age this figure was higher, 54 per cent., indicating a greater persistence of infection than in older persons. Among 1,971 persons who had negative primary cultures, and were cultured again later, 13.4 per cent. were found to be carriers. This indicates that isolation procedures ordinarily adopted to prevent the spread of the infection in the home are inadequate. The total percentage of family contacts found positive either in primary or later cultures was 31.3 per cent. for persons under nine years of age; 20.8 per cent. for those ten to nineteen years of age; and 19.6 per cent. for those over twenty years of age. Examination of a sample of cultures showed 57.5 per cent. carriers to be harboring virulent diphtheria bacilli. On this basis the total carrier rate for virulent bacilli became 13.1 per cent., while it was 18 per cent. for children under nine years of age.

Discovery and Prevention of Tuberculosis in the Community

A. S. Pope (*Journal of the American Medical Association,* 97:846, September 19, 1931) says that in carrying out the "ten year program" of the State of Massachusetts for the discovery and prevention of tuberculosis, it has been found possible to test school children for tuberculous infection by the application of the Von Pirquet test on a state-wide basis. During the first six years 140,000 school children in 253 cities and towns have been tested. The percentage of positive reactors has varied from 16 to 34 per cent. Those showing positive reactions are also examined roentgenologically. In certain Massachusetts cities studied there was a definite correlation between the tuberculosis death rate, the percentage of reactors in the public schools, and the proportion of pulmonary tuberculosis found among school children. Exposure to open pulmonary tuberculosis in the household is evidently the most important single factor in the development of tuberculosis in children.

The Damaged Heart in Industry

E. M. McIlvain (*Journal of the Michigan State Medical Society,* 30:606, August, 1931) emphasizes the importance of a thorough study of persons who show any signs of heart damage on application for employment. Some cases of apparent heart damage show only temporary symptoms, indicating that the condition is not a factor of danger in industry. The author has classified cardiac or possible cardiac cases in relation to their fitness for industrial employment as follows: 1. Potential cardiac cases; those who have had rheumatic fever, tonsillitis, swelling of the maxillary or sublingual glands, etc. Any focus of infection should be removed before these persons are accepted for employment for manual work, and they should be kept under observation. 2. Persons with functional murmurs, tachycardia of extrinsic origin, and those having extra-cardiac origins except hyperthyroidism, or arrhythmias functional in origin, can be accepted for unlimited work placement. 3. Persons under forty years of age fully compensated and with a sense of well-being showing a persistent mitral systolic murmur without hypertrophy or with slight hypertrophy, lesion quiescent, and absence of focal infection, can be accepted for full work. 4. Cases of chronic myocarditis with hypertrophy should be given selected placement with periodic observations. 5. Cases with aortic lesions with hypertrophy and fully compensated can also be considered for limited employment. 6. Cases with cardiac insufficiency should probably not seek manual labor; they are inclined to rapid degeneration under stress of physical activity. From 1920 to 1929, the plant of which the author is medical director has employed 129 persons with damaged hearts; 42 of these were cases of mitral stenosis without hypertrophy; 18 cases of mitral stenosis with slight hypertrophy; 57 cases of arrhythmia without demonstrable organic lesion; 10 unclassified functional murmurs. Of these 3 have died of their cardiac condition, although they were on selected work; but in these cases death could not be attributed to their occupation, but to conditions outside this.

Coal Mines and Tuberculosis

S. Lyle Cummins (*Journal of State Hygiene,* 39:256, September, 1931) notes that it has long been recognized that the death rate from tuberculosis is low among coal miners, although this group shows a high death rate from other respiratory diseases. Coal miners are constantly exposed to the inhalation of stone dust as well as coal dust; and recent investigations have shown that they do develop a fairly high percentage of silicosis. But with the accumulation of silica dust in the lungs there is also an accumulation of coal dust in the lungs of coal miners. In this respect, therefore, the silicosis of the coal miner differs from that of other workers exposed to stone dust alone. The author's studies, in collaboration with Weatherall, have shown that coal dust in fine division can absorb and inactivate tuberculin solutions to a marked extent. The relative exemption of coal miners from tuberculosis, the author believes, is due to this absorptive action of the coal dust which accumulates in the lungs. This accumulation of coal dust in the lungs is not, however, "an unmixed blessing." The accumulation of stone dust and coal dust combined in the lungs leads to the production of bronchitis and emphysema; most old coal

miners are dyspneic, and the death rate from so-called "bronchitis" among them is high. The need of improved ventilation and protection from dust in coal mines is evident.

Butchers' Dermatitis

B. Schwartz (*Journal of Industrial Hygiene,* 13:233, September, 1931) reports a study of butchers' dermititis conducted by the U. S. Department of Agriculture. This form of dermatitis occurs chiefly in butchers working in meat packing establishments and handling the carcasses of freshly killed animals. The lesions are erythematous areas with the formation of pinhead vesicles and followed by eruptions with intense itching; the webs between the fingers are first involved, the lesions spreading from there over the hand and in some cases on the arm as far as the elbow. The affection does not appear immediately upon the exposure of susceptible persons, but makes its appearance after a period varying from three to thirty days. It is presumably due to sensitization of susceptible persons to the tissues and fluids of swine, cattle and sheep. Some butchers recover completely after the first attack with or without treatment; others develop repeated attacks while the exposure to the inciting cause is continued. Many workers lose their susceptibility in the course of time. While most workers become about equally sensitized to the various classes of meat food animals, some show a specific susceptibility to one or two classes of animals and are not affected by contact with others. Frequent washing of the hands in cold water, thorough scrubbing of the hands with soap and brush at the end of the day's work and coating the hands with vaseline or other ointments before beginning the day's work, are usually effective in preventing the development of this form of dermatitis.

Reducing Venereal Disease in Washington

W. R. Jones (*Northwest Medicine,* 30:315, July, 1931) notes that in the State of Washington persons with venereal disease can be compelled to take treatment or be jailed. The work of preventing venereal disease includes the examination of food handlers for venereal disease as well as for bacterial infection. Any food handlers found to have venereal disease must submit to treatment or must leave their jobs; syphilitics under treatment are permitted to work. Drivers of public conveyances are also examined for venereal disease once a year and compelled to take treatment. By this means the incidence of syphilis in these two classes of workers has been reduced from 5.9 per cent. to 2.9 per cent. in three and a half years. Seattle has two venereal clinics, and previously untreated syphilitics coming to these clinics are held until rendered non-infectious, and then referred to their own physicians or to an outpatient clinic. Persons under arrest who are suspected of having venereal disease, especially moral offenders and prostitutes, are examined and, if necessary, treated. The law of the State requires the reporting of cases of venereal disease first by number, and then if the patient quits treatment too soon, by name. In the latter case it is the duty of the health officer to see that the patient continues treatment with the original doctor, with another of his own choosing, or at a public clinic.

Ophthalmology

Ocular Symptoms in Acute Poliomyelitis

H. M. Emmons (*American Journal of Ophthalmology,* ser. 3, 14:927, September, 1931) reports a study of the ocular symptoms in 70 cases of infantile paralysis examined within two weeks of the onset of symptoms at the Haynes Memorial Hospital; this series includes many cases from the Watertown epidemic. Among these 70 cases, there were 20, or 29 per cent., that showed ocular symptoms. These symptoms were, paralysis of the internal rectus, 3 cases, one with unequal pupils; paralysis of the external rectus, 2 cases, one with diplopia; ptosis of the upper lid, 2 cases (in one case definite ptosis on the right side, slight on the left); nystagmus, 2 cases; unequal pupils, 4 cases; sluggish pupils, 5 cases; pupils dilatated above normal, 2 cases. All but one of these cases were followed up and showed complete disappearance of eye symptoms within three months. Ruling out all findings except definite paralysis of the eye muscles, ocular involvement was present in 10 per cent. A review of reports of other epidemics shows that ocular involvement has been reported in from 2 to 9 per cent. of cases; and in one epidemic reported by Medius, in 14 per cent. But in this latter epidemic all cases were examined by an ophthalmologist; in the other epidemics reported the data were based on observations of the general medical staffs. The author is of the opinion that the occurrence of ocular paralysis in acute poliomyelitis is sufficiently common to receive more attention and discussion in both general and ophthalmologic literature. All cases showing such symptoms should be given convalescent serum.

Post-Traumatic Tuberculous Uveitis

F. B. Fralick (*Archives of Ophthalmology,* 6:420, September, 1931) notes that tuberculous uveitis may result from non-penetrating trauma to the eye, and in such cases the infection is definitely of endogenous origin. This may occur in apparently healthy persons. In such cases either a latent tuberculosis is roused into activity as a result of the trauma, and a lesion becomes localized at the site of injury with the bacilli coming from a focus elsewhere in the body, or the injury aggravates a lesion previously present in the uvea, but not causing symptoms. Injury by reducing resistance is undoubtedly a factor in the development of tuberculosis. An illustrative case in a boy aged three years is reported in which acute inflammation with pain and cloudiness of vision developed three weeks after a blow on the eye. General health was good both before and after the injury but there was a history of exposure to infection from a tuberculous adult living with the family for two years. Pulmonary roentgenograms showed increased peribronchial markings, especially in the upper lobes, but no parenchymal lesions. Vision was completely lost in this eye, the anterior chamber continued to increase in depth, and later the surface of the iris showed nodular, grayish red elevations. There was little pain, but increased lacrimation, and the eye was enucleated. Examination showed a "conglomerate mass" in the eye, nearly obliterating the anterior chamber; this showed definite tubercle formation with giant cells and plasma and small round cells between them. Re-examination of the patient a year later showed no evidence of tuberculosis in any form.

Treatment of Tuberculous Diseases of the Eye With Radium and Roentgen Rays

Hoffmann (*Deutsche medizinische Wochenschrift,* 57: 1448, Aug. 21, 1931) reports the use of both Roentgen rays and radium in the treatment of various tuberculous diseases of the eye at the Königsberg University Eye Clinic. The author has found the radiotherapy of special value in the treatment of tuberculous lesions of the lacrimal duct and conjunctiva, and believes that it should be given first place in these conditions; the con-

(*Concluded on page 444*)

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The Biology of Beauty

Never was the cult of artificial beauty so sedulously pursued as by our contraception-cursed, because economically baffled, women. Natural good looks are becoming scarce among them because of contraceptive devastation. Cosmetics are resorted to in order to hide the effects of the neuter life upon wives and the petting sorority, and to attain a suggestion of that charming femininity which once upon a time led men to take a real interest in marriage. It is a ghastly spectacle—a sickening masquerade.

Birth control advocates are particularly given to the drawing of pictures of mothers harassed by repeated pregnancies, wearied and shattered by frequent maternity. Long suffering, exhaustion and danger to life are stressed over and over again.

How, then, do they manage to live so long? Bell, Jones and Cattell have shown that the larger the number of children the greater the longevity.

How, then, do multiparae manage to show such relatively great resistance to infection? Benda has proved that in such women the reticulo-endotheliel system promotes the defense of the organism against infection. The fall in the birth-rate, giving a larger proportion of primiparae, keeps maternal mortality at the old point despite scientific advances, because of the primipara's relatively greater vulnerability to infection.

How, then, do the mothers of the larger families happen to succumb to uterine cancer far less frequently than married women with few or no children? This has been demonstrated at points as far apart as Buenos Aires (Roffo) and Berlin (Kauffmann).

The endocrine and metabolic aspects of pregnancy teach us that this state makes for physical opulence and health as compared with the voluntarily sterile spinsterhood now seen so frequently in marriage. What physician is unfamiliar with the marvelous endocrine evolution and biologic flowering of the woman's organism in fulfilled marriage, or with the thwarted species of woman doomed to an unfulfilled or partially fulfilled biologic destiny?

The nervous, irascible, easily fatigable, easily infected, voluntarily sterile, frustrated, neuter, poorly "thatched," spinster type of wife is surely as horrible an example as the most pathetic of the propagandists' "cases."

"Sterility or insufficient reproductive activity upsets woman's whole metabolism. . . . Pregnancy cures most of her functional troubles" (D. Petit-Dutaillis).

The propagandists would have us believe that pathology in pregnancy and the puerperium, and rapidity of successive births, are the rule and not the exception, and that large families are *per se* a cause of high infant mortality. They can not see pathology at all in the more or less sterile spinster. They can not see any biologic beauty in the miracle of motherhood repeated more than once or twice.

Says Dalché: "No fecundation or ovulation having taken place up to then [voluntary sterility up to twenty-seven or twenty-eight], the organism, in a toxic or frustrated condition, has misdirected its powers; when it is not towards fibroma it is to something worse; endocrine dysfunction leads to its exhaustion; muscle and mucosa degenerate and atrophy as in the aged . . . with lack of function there has been a change in evolution."

Petit-Dutaillis finds that the habitual interruption of the sexual cycle, the natural end of which is pregnancy, causes uterine fibromas and adenomas, general and genital senility of premature type, and utero-ovarian sclerosis associated with hypertension.

Aside from contraceptive infection and the neurotic effects of certain practices too hackneyed to be cited, what we wish especially to stress is the presenility and loss of beauty that result from the non-absorption of seminal elements (Pierre, Jouve, Aragon, Thomson, Vogt, Meyer, Laffont and Sedillot), which normally takes place at the level of the cubical epithelium of the neck of the uterus (and to a considerable extent from the vagina).

Sedillot has introduced an apt term to describe the complex of physical, psychic, neurotic and pelvic disorders which result from contraception. He calls it the Birth Control Syndrome. He believes that "Every married woman who indulges habitually in preventive measures becomes abnormal in a physiological sense and lays herself open to disturbance of her health, especially of her nervous and endocrine-sympathetic system."

Under contraception the same "ideal" is reached by women as if they practiced homosexuality—the seminal phase is eliminated.

It is evident enough that nature can not be tricked. Why do we try to trick ourselves and vainly imagine that we can act sexually as we will and gather no harvest of tares? Let it be granted that economic conditions say nay to children, but let it be understood that in adjusting physiology to economic conditions rather than economic conditions to physiology we are, among

other things, despoiling woman of biologic charm.

Thus beauty is given as a hostage to the machine age.

Is this not too high a price to pay for our civilization, such as it is?

How to Reduce Hospital Deficits

In the course of a recent drive for hospital funds the suggestion was made to the captains by an eminent surgeon that they make personal purchases from their bootleggers contingent upon contributions to the drive. He pictured large returns, in view of the vast prosperity of the bootlegging fraternity. He averred that these gentry were so wealthy that they did not know what to do with their money.

For our own part, we feel that this source of revenue ought to be tapped in behalf of the hospitals. It may turn out to be the very means whereby the large deficits to which hospital directors are looking forward may be reduced or wiped out.

We see no reason why contributions should be contingent upon purchases. The bootleggers are anxious to discover ways through which they may purchase a degree of putative respectability. The case of a bootlegger caught in the toils would not be injured by evidence going to show huge contributions to this or that hospital. Upon second thought, we think the bootleggers should not be solicited along the line suggested, but, if you like, intimidated.

There need be no moral scruples on the part of anyone. Since Supreme Court Justice Oliver Wendell Holmes has held that bootleggers cannot offer the illegality of their business as an excuse for the non-payment of taxes, and that no deductions can be permitted in the tax returns even for illegal expenses such as bribery, we see no reason why the hospitals should worry on the score of where their money comes from.

The Fetid Status Quo

Crowded clinics and empty offices compel reflection.

Time was when any dispensary patient might become highly prosperous and seek an erstwhile dispensary doctor as a private client. In those days the wise doctor treated the poor as potential patients of the profession in its private capacity. A very large practice was sometimes based upon a former dispensary clientele. But to-day, when it is not to be denied that the poor tend to become poorer (the proportion of the total social income going to those with annual incomes of less than $5,000 steadily decreased from 1921 to 1929), and that the wealthy tend to become wealthier (the top one per cent of federal taxpayers received three-fifths of the total reported increase of income from 1921 to 1929), dispensary patients are no longer potential private clients. This is a large factor in certain changes in community medical service which are giving much concern because they are not wholesome.

Doctors have a large stake in the general diffusion of prosperity, if private practice is to be maintained. The malodorous economic and social situation now prevailing bears heavily upon the profession. It ought to stimulate both interest and action in respect of basic economics. The devil-take-the-hindmost type of individualism is more destructive than ever.

Doctors Accessible and Inaccessible

Plans aiming to reduce the number of working days in the week, and the number of working hours in the day, in so far as they mean the employment of more people and the maintenance of a fair wage, should be favored by the medical profession, since greater leisure of an employed class earning good pay would tend to enable such a class to seek proper medical care in far greater numbers than is now the case. Do we not all wonder, at times, how our industrial slaves ever manage to make contact with the private practitioner at all?

What wonder that the night pay clinic comes to the rescue of the worker and the middle-class patient? How else can their medical problems be partially solved? In times past the general practitioner was accessible at all times to the ambulant ill and near-ill, now tied almost continuously to their drudgery when employed at all. The present situation should never have been allowed to develop. It is perhaps too late now to rectify matters, since many of our institutions are rapidly increasing their facilities for this night work and charging good fees for it, both as a matter of community service and as an offset to certain losses that are presumably occurring, as, for example, in the compensation field, since the vast armies of unemployed are certainly not being injured in the industrial shambles, and in the field of private-room service.

At any rate, a shorter working week will better serve the general aims of civilization and of business itself, while it will further the specific aims of modern medicine.

Security

The demand of France for security inspires ironical thoughts. Are we not told by great experts in finance that there are no wholly safe investments any more? Are we not all living under a system which, "in full possession of resources and machinery sufficient to abolish poverty, has increased economic insecurity and then calmly assured its victims that they starve because they have produced too much"?

What about the insecurity of health?

What about the insecurity of life itself?

What pact will guarantee these?

Why do we not demand such security as this at least as insistently as France demands military and political security?

Old Stuff

In our November issue we pointed out that the numerous recent attempts to supply the Anglo-Saxon world with treatises on the art of love designed to straighten out sexual tangles in the marital sphere were nothing new, and we intimated that the writers of long ago had done better work in the same field. We mentioned the Kama Sutra of Vatsyayana, and have since been informed of several others, among which are the "Anagaranga" or Hindu Art of Love, the "Perfumed Garden," the "Kalogynomia" of T. Bell, M.D., published in London in 1821, and the "Elements of Social Science or Physical, Sexual and Natural Religion," which is another old English medical publication, by Truelove. The Eastern works describe in detail sixty-eight different methods of performing the sexual act. Cleopatra is supposed to have invented seven more, bringing the total up to seventy-five, which probably accounts for Shakespeare's description of her: "Age cannot wither, nor custom stale her infinite variety." One correspondent, a great expert in book lore, writes to us: "You are entirely correct, in your editorial, in declaring that books purporting to be guides to the art of sexual love are about as old as sex itself."

So we reiterate our advice to the amateurish ladies who seem to be perpetrating most of the current literature to look up the old stuff. These tyros will be no

more shocked than the dumb among their own readers.

The old stuff is strong meat for babes. There were no endowed Comstocks in those days.

Why the pallid new stuff? What good will this naive —when not fraudulent—piffle do?

Poliomyelitis in the Private Hospitals

It was a fine spirit that led so many of the private hospitals of New York City to open their doors to the recent poliomyelitis cases, with the certainty that it would scare private patients away, as well as preempt needed beds. Even where the acute stage had passed by, to the lay mind the presence of any case spelled danger. The cautious counsel of a few persons was ruthlessly brushed aside and a service rendered that will never be forgotten. These institutions meet the hardest demands without reservations and as a matter of course and merit donations and endowments from the philanthropically disposed beyond all other agencies of mercy and charity and science.

One of the "Glories" of State Medicine

The Health Commissioner of New York City, in a recent address, expressed the belief that greater checks were needed upon unscrupulous members of the medical profession who perform illegal work in places that are under inadequate supervision and discipline. He thought that the State would have to take over regulation unless the profession itself took sterner steps. He then went on to say that we must find a method whereby State control of medicine will be established.

The Health Commissioner probably had in mind Dr. Rongy's recent charges regarding the abortion industry. But we fail to see how State medicine would help matters, for thoroughgoing State medicine, such as we see in Russia, legalizes abortion. It seems to us that a people who have reached a point that leads them to accept State medicine is ready and ripe for organized abortion as a realistic way of meeting the notorious shortcomings of contraception.

Of course, the Commissioner thinks he is heralding a different kind of a dawn from this.

It is a naive point of view.

Miscellany

The Great Birth Control Sweepstakes

The MEDICAL TIMES AND LONG ISLAND MEDICAL JOURNAL is considering the institution of an annual prize to be awarded to the physician who shall design a contraceptive device eclipsing in chronic irritative properties, and therefore cancer-producing potentiality, all competing devices already in actual and accredited use on a large scale.

This will call for a higher degree of ingenuity than might at first thought seem requisite. For example, what device now in widespread and accredited use sets a standard so high as regards chronic irritation as to challenge "improvement"?

Were we awarding the prize for 1931 we should have no hesitancy in designating one of the several designers of the Pust type of so-called pessary. At any rate, we cite this type as one for competitors to bear carefully in mind.

In order to show the difficulties that hedge in the numerous ambitious rivals who may enter this contest—success in which, by the way, will probably bring to the winner, among other stakes, a certificate entitling him to free cremation—we beg to offer a discussion of the type of pessary to which we have alluded.

A ring or star of silkworm gut is placed in the uterine cavity with an extension of it hanging down in the cervical canal. Silver wire is employed to fix the silkworm gut in one or the other form. Three sizes suffice for adaptation to the uterine cavity.

When first inserted there may be pain and bleeding, and for awhile the menstruations may be profuse. Leucorrhea is established because of the cervical irritation of the silkworm gut extension. Infection from the vagina is also invited by the dangling extension. Already existing intrauterine infections will hardly be benefited.

This type of pessary is left in the uterus for a year or more. The theory of its use is that through the irritation of the uterine mucosa there is an exaggeration of its natural rate of change to a premenstrual state of congestion, thus keeping the endometrium in an unreceptive condition with respect to impregnation (Gräfenberg).

In view of the easy susceptibility of the uterus to malignancy in the presence of chronic irritation, this type of pessary should produce impressive results. It is extremely popular on the Continent and is claimed to give a high degree of "protection."

This discussion should make clear how severe a test of professional ingenuity our sweepstakes will prove to be, in case we decide to institute it.

Questionnaires for Married Women

We understand that the following questionnaire, sent out by a physician, is now going the domestic rounds:

1—If you were born again, would you like to be a man or woman? Why?
2—When did you first feel sexual desire?
3—Was it spontaneous or a consequence of external influence? Reading, observation of a love scene, stimulated by the presence or contact of another person, man or woman?
4—Did you find satisfaction of this desire through yourself or through another person, man or woman?
5—When had you had full intercourse with a man? Was it through marriage? If not, did you do it willingly or not?
6—Did you enter marriage with full hope of sexual satisfaction?
7—Did you intend to have children?
8—If not, why?
9—Did you practice birth control or resort to other forms of sexual pleasure?
10—Had you any other relation besides your husband's?
11—For what reason?
Sentimental?
Sexual?
Financial necessities?
12—Did you accept the idea of duty, of faithfulness to your husband?
13—What did you expect from him?
14—How did public opinion influence you?
15—In case of pregnancy, would you ever resort to abortion?
16—Do you uphold abortion as a morally acceptable measure?
17—Because of marital experience, do you suggest a particular age for marriage?
18—Do you consider marriage necessary to health?
19—Do you think marriage sexually satisfactory?
20—Do you think there should be sexual diet in marriage?
21—Do you think there should be a school of sexual training for men and women?
22—At what age should this education begin?
23—What do you think about divorce?
24—Do you think that sexual questions are the secret cause of the conflicts in married life and that they lead to divorce?
25—What do you think of companionate marriage?

We have prepared a little questionnaire of our own which we are thinking (just thinking) of submitting to our matrons. We are all for a Seabury Inquiry of a medical sort, with power of subpena over contraceptive apparatus and Puritanic repressions:

1—Have you any sexual gumption or are you just dumb?
2—Do you favor a "kindergarten-to-college" school of sex?

3—What subjects of study would you suggest for post-graduates?
4—Has your husband been a disappointment?
5—What did you expect from him?
6—If disappointed, is your sex-starvation problem unsolved?
7—If solved, how did you effect the solution?
8—Do you believe that marriage can be a sexual success indefinitely?
9—Are you sold on easy divorce?
10—Are you acquainted with any gigolos?
11—If so, does your husband care?
12—Discuss the subject of boy friends.
13—Do you ever have any strong sexual desire?
14—How strong?
15—Give a detailed account of such sexual experiences as you may have had, of all types.
16—What do you understand by the term "third sex"?
17—What is your idea of excess in sexual relations?
18—Do you practice birth control?
19—If not, why not?
20—If so, have you discovered any reliable method?
21—Have you any opinion as to the rosebud tampon?
22—What is your personal reaction to the condom?
23—How many abortions have you had?
24—Are you influenced at all by public opinion in matters pertaining to morals?
25—Have you any morals at all in reality?

Contemporary Progress

(*Concluded from page 440*)

junctival scars are much smaller with this method than with any other. In cases of tuberculous iritis that are resistant to other forms of treatment, good results have been obtained with both Roentgen rays and radium. In 17 cases treated with the Roentgen rays, the inflammation subsided in 16 cases; 6 showed recurrence in 2 of which further treatment had no effect; in 2 cases radium was effective in the treatment of the recurrence when the Roentgen rays failed. Of 48 cases of tuberculous iridocyclitis treated with radium, 45 were relieved, and 3 showed no improvement. In cases of tuberculous retinal hemorrhage, good results have always been obtained with the Roentgen rays. Radium has given excellent results in chorioretinitis, even when the macula was involved. While the Roentgen rays were first employed in tuberculous eye diseases, the author has recently used radium in most cases. The dosage with both is usually 20 per cent. of the skin erythema dose. For radium application very small platinum tubes are employed. Radiotherapy, the author believes, has no direct effect on the tubercle bacilli, but acts chiefly on the lymph cells and on the blood-vessels. The reaction to radiotherapy resembles that to tuberculin; and radiotherapy gives good results in much the same type of cases as tuberculin. It can be used in cases that are hypersensitive to tuberculin with good results. For acute inflammatory conditions, especially of the exudative type, radium gives better results than the Roentgen rays, as a rule.

Pneumococcus Infection of the Eye

W. Jahnke and L. Wâmoscher (*Zeitschrift für Augenheilkunde*, 74:214, June, 1931) report a study of the types of pneumococci found in pneumococcus infections of the eye at the Berlin University Eye Clinic. In 104 cases in which pneumococcus infection was suspected clinically and bacteriological study made, pneumococci were found in 73 cases. A type I organism was present in only one case, and then on a normal conjunctiva; type II was found in 9 cases, type III in 12 cases, and a group IV in the majority, 51 cases. In this series of pneumococcic eye infections there were 33 cases of conjunctivitis with 25 group IV infections; 20 cases of dacrocystitis with 12 group IV infections; and 8 cases of ulcus serpens with 5 group IV infections. While group IV infections are considered to be of comparatively mild virulence, and pneumococci of this group are frequently found in the nasopharynx in normal persons, the cases of ulcus serpens due to infection with this group of pneumococci ran a more unfavorable course than those due to type II infection. This is to be attributed to the low resistance of the patients rather than to the virulence of the infecting pneumococcus. Since the anti-pneumococcus sera at present available are effective chiefly against type I infections, it is evident that the use of serum is not indicated in pneumococcus infections of the eye.

Nonspecific Protein Therapy

J. Levine (*Archives of Ophthalmology*, 6:75, July, 1931) has found that many intra-ocular lesions are benefited by fever therapy. In eye diseases, as in other conditions, many foreign protein substances have been used for injection to produce a febrile reaction. He has found that both milk and typhoid vaccine have definite disadvantages in ophthalmological practice. The substance that is best adapted for the ophthalmologist's use and has given the best results in the author's experience is the bacterial vaccine known as Coley's mixed toxin. This is a standardized substance obtainable in rubber-capped vials; the small dosage required (3 minims) permits the injections to be made into the muscular tissues of the arm. The author has used this vaccine for approximately 100 injections in cases in which nonspecific protein therapy was indicated, and only on two occasions was it necessary to increase the dose to 4 minims to obtain a suitable reaction. The reaction begins four or five hours after injection, allowing the patient time to reach his home after treatment; it begins with a chill followed by elevation of temperature to 101 to 103° F., lasting from twelve to twenty-four hours. There may be profuse sweating or weakness, but no headache or vomiting. The author has used Coley's mixed toxin in cases of acute iritis, uveitis with keratitis punctata, corneal abscess, corneal ulcer, vitreous opacities with no discernible uveal lesion and postoperative iridocyclitis, with uniformly good results.

Etiologic Study of a Series of Optic Neuropathies

A. C. Woods and W. M. Rowland (*Journal of the American Medical Association*, 97:375, August 8, 1931) report a study of 138 cases of optic neuropathies of various types, including optic atrophy, retrobulbar neuritis, optic neuritis and choked disc. Of these cases the optic neuropathy was due to actual intracranial tumor in 27.7 per cent.; and to pseudotumor in 5.1 per cent.; 17.7 per cent. were due to syphilis; 10.9 per cent. to arteriosclerosis; 8.1 per cent. to posterior sinus disease; 6.5 per cent. to multiple sclerosis; 2.9 per cent. to focal infections; and 4.4 per cent. were toxic amblyopia. A variety of miscellaneous conditions accounted for 9.1 per cent.; and in 8.1 per cent. the exact etiological factors could not be determined.

Roentgen Therapy for Pyloric Stenosis

According to present-day knowledge, the symptoms of congenital pyloric obstruction are dependent on the degree of spasm and the amount of obstruction caused by the tumor. That the pylorospasm is a manifestation of vegetative imbalance is thought by many authorities. There is some evidence that this imbalance is the result of a postnatal involution of the suprarenal glands. Opinions as to the indications for surgical intervention vary a great deal. I have found a therapeutic roentgen test more reliable than any other procedure. In the medical treatment of these cases, hick feedings, atropine, papaverine, phenobarbital, lavage and gavage are used more or less by various clinicians. Surgically, the Rammstedt operation is the method of choice. Roentgen therapy has been found effective by myself and others in certain cases.—Orville Barbour, M.D., *J. A. M. A.*, Aug. 15, 1931.

The Common Cold

The medical profesion is much abused because it cannot cope with the common cold. Here, people say, is a world-wide disease which is always with us and is responsible for an enormous amount of discomfort and loss of human efficiency; yet nothing is known about its causation, and its treatment is empirical and unsatisfactory. To anyone acquainted with the facts such a criticism is of course manifestly unjust. The problem of ætiology is far from being a simple one; the very fact that it has remained unsolved so long is proof enough of that. None of the ordinary laboratory animals is suited for its investigation and the disease is so widespread in man as to make him of little value as an experimental animal unless he is subjected to most rigorous quarantine and irksome isolation.

For some time now the idea has been current among bacteriologists that the primary cause of the common cold is not one of the ordinary bacteria, but a member of the group of filter-passing viruses. Support to this view was lent by the findings of W. Kruse (1914), G. B. Foster (1916), and H. Dold (1917); but doubts have now been settled beyond all dispute by the masterly investigation which Prof. A. R. Dochez and his colleagues describe elsewhere in this issue. Their work soon led them to the conclusion that the visible bacteria present in the nasopharyngeal discharge were only of secondary importance, so they turned their attention to the filter-passing viruses. And since observation had shown that the chimpanzee was subject to a respiratory infection resembling in every way the human cold, they used this animal for their experimental work. The results of these experiments on apes left no doubt that the cold virus was a filter-passer. Typical colds were produced in chimpanzees by means of the filtered nasopharyngeal washings from human cases, passages in series from ape to ape were realised, and infection by contact was shown to take place. Needless to say the most stringent precautions were taken to exclude infection from outside sources. Dochez and his colleagues then proceeded to carry out the same experiments with human volunteers. Here again the greatest care was taken to ensure that their subject were not infected before being taken on experiment and that all outside sources of infection were excluded. The human experiments were just as conclusive as those made with the chimpanzee. But this is not all. Using a culture medium consisting of a special buffered broth containing chick embryo tissue and brought to a suitable reduction potential by means of cystein hydrochloride, these workers have been able to cultivate the virus of the common cold. And with the fifteenth subculture, representing a dilution of 1 in 1,000,000,000,000,000, they have produced typical colds in two out of three human volunteers.

Not less interesting are the speculations of Dochez and his collaborators on the part played by this virus in respiratory infections in general. Their experimental work has shown them that this virus renders the respiratory tract more susceptible to the implantation of pathogenic organisms, as well as enhancing the activity of any potential pathogens which may be present there. Observations in America have shown that the common cold has three peaks of incidence, one in September and October, another in January and February, and a third in April and May. Further, the cases occurring in winter and spring are usually more severe than those arising in the autumn. Coincident with this increased virulence of colds as the winter lengthens into spring there is an increasingly wide distribution of such organisms as the pneumococcus, the influenza bacillus, and *Streptococcus hæmolyticus* in the nasopharynx of healthy individuals. Thus as the winter advances the opportunity enlarges for these potential pathogenic organisms to cause infection, with the result that their distribution becomes more widespread and their virulence is probably enhanced. It is at this period of the year that pneumonias and bronchial infections are most common, and it may well be that Dochez's virus is in part responsible for this. Be this as it may, the principal thing for the moment is that the ætiology of the common cold has at last been cleared up. Complete confirmation of these findings is forthcoming from an investigation carried out by P. H. Long and a team of collaborators on human volunteers at the Johns Hopkins University and an important field is opened up for further work. All who have followed these researches of Dochez and his associates must have been struck not only by their thoroughness, but also by their undeviating march towards success. It is a brilliant piece of work.—*Lancet*, Sept. 5, 1931.

More Deadly Than the Male

Or correctly speaking, more deadly than in the male is the risk of gonorrheal infection in the female. To be satisfied with local treatment in any gonorrheal infection in women is to be optimistic to say the least. It is safer and affords the patient more immediate and definite relief to support any local treatment decided on by the internal administration of Sanmetto with its antispasmodic sedative effect and specific sandalwood action on the gonococci and secondary invaders.

How Soon After Amputation Should an Artificial Leg be Applied

This is a question that is often asked of A. A. Marks, Inc., of New York, one of the largest and oldest manufacturers of artificial limbs in the country. According to Mr. Geo. E. Marks, who is also the originator of many ingenious devices to help the crippled, there is a rational answer to this query. His many years of experience have shown that the leg should be applied as soon as the stump is thoroughly healed and the patient has regained sufficient strength to go about on crutches. Before procuring, some attention should be given to the preparation of the stump. Tight bandages should be worn from the moment the stump is healed. These bandages are far more efficacious in reducing a stump than the leather shrinker or reducer sometimes advocated. The joints should be moved frequently and the stump rubbed vigorously in order to maintain mobility.

It is the part of wisdom to apply an artificial leg as soon as possible after amputation. Walking on crutches is dangerous; a slip or fall may seriously injure the stump.

If a stump is permitted to go indefinitely without performing its share of work, it will become weak, nervous and disordered, and circulation will become sluggish. It is much more difficult to use an artificial leg on a stump that has been permitted to get in this condiiton than if the leg is applied immediately after the limb has healed.

A. A. Marks will be glad to send literature to interested physicians.

Local Anesthesia in Reduction of Fractures

It has been found that if a solution of 1 or 2 per cent procaine hydrochloride is injected into the hematoma, which is present in the majority of fresh fractures, the lacerated tissues, both bone tissue and others, will be bathed with procaine, eliminating pain. Pain having been eliminated, muscle spasm disappears and the manipulation for reduction of the fracture becomes not only painless but relatively simple.—R. G. Carothers, M.D., *J. A. M. A.*, Aug. 22, 1931.

Endocrinology

Huston Brothers of Chicago, Ill., have published an extremely interesting brochure on the subject of Endocrinology. We quote from the first page:

"Endocrinology—Now really and truly, what do we positively know about it? Is it a safe, dependable therapeutic agent? Let us confine ourselves to the facts. Let there be no exaggeration. Let us calmly, deliberately and earnestly seek the absolute truth on this important subject."

Every physician would act wisely to read this new publication. It is issued this month, and is sent gratis.

Quotations are made from such authorities as Dr. Carlson of the University of Chicago. Dr. Cassimir Funk, University of Paris, Dr. Wm. T. Belfield, Chicago, and the Journal of the A. M. A.

These quotations and all of the matter in this valuable little publication would appear to support the view that this comparatively new method of treatment is a remedial agent of distinct value, especially in cases of Obesity, Male Impotence, and Diabetes.

According to this brochure: "There now is unfolded before the astounded view of the seeing eye, a land of promise, beside which the vast territories conquered by Lister and Pasteur, are destined to pale into insignificance."

Why a Storm Belt?

The patient in need of abdominal uplift can wear nothing more satisfactory than a "Storm Supporter." When properly adjusted, it holds the organs in position, thus permitting the normal assimilation of food and elimination of waste, that is so necessary for health.

Gas does not form after meals when the ptosed stomach is held in place by the "Storm Binder", nor can pockets form in the colon when it is adequately supported.

This mechanical aid for Ptosis is only a temporary need for the average patient, as the sagging muscles quickly begin to regain tone when the strain is removed, and there is a gain in weight as soon as the system gets the benefit of the food intake. That feeling of fatigue, so devastating to the busy man and woman of today disappears and the old-time pep and energy return.

These supporters are light in weight, and reasonable in price; they are made of washable materials, which is a distinct advantage to the wearer, and can be designed to take the place of the corset.

The many testimonials are evidence of the value of "Storm Supporters." Abdominal Supporter Company, 47 West 47th St., N. Y. C. Sole manufacturers in Greater New York of "Storm Belts."

Wisdom Teeth

It is not uncommon for third molar teeth to develop in an abnormal position, i.e. horizontally or obliquely, and, when such is the case, there is a tendency for them to press upon the next tooth (the second molar). In such circumstances, any, or a number, of the following conditions may arise: neuralgia, persistent headache, stiffness or neuritic pains in the neck and shoulders, earache, ocular symptoms, general malaise, neurasthenia, fits, and even mild forms of mania. Most of the recognized textbooks on dental pathology mention such symptoms as possibilities, without, however, giving further details, and the view is mostly taken that some septic condition is necessarily present, in addition to the impaction.—Kidd, *The Practitioner.*

In Disturbance of the Stomach

In serious disturbances of the stomach or intestine and particularly where gastric or duodenal ulcer is present or suspected, it would appear that nourishment capable of rapid and complete assimilation as set forth in the first mixture, and a low-residue diet as prepared from the second formula, is much to be desired as a part of the treatment, and the following suggestions are offered as a means to this end.

1. Mellin's Food .....4 tablespoonfuls
   Water .....1 cupful

Dissolve the Mellin's Food in the water by stirring briskly (no cooking required). To be given cold or warm, not hot.

(Low-residue diet)

2. Mellin's Food ..... 6 tablespoonfuls
   Whole Milk .....10 fluidounces
   Water ..... 4 fluidounces

Dissolve the Mellin's Food in the water and then add the milk (no cooking required). Allow the mixture to stand in a cool place for 2 hours after which a cupful may be given every 2 or 3 hours, or at such intervals as the physician directs.

Distress from hyperacidity is promptly relieved by giving the first-mentioned mixture. A small quantity of Mellin's Food, dry, placed upon the tongue from time to time, permitted to remain in the mouth until dissolved and then swallowed, will also give quick relief. This use of dry Mellin's Food is especially recommended in persistent vomiting.

Hints on the Treatment of Parkinson's Disease

In treating Parkinson's Disease, comparative seclusion is better than populous resorts. Avoid cold baths; electric or CO_2 baths may be useful. So is occupational therapy. Medically, avoid all diaphoretics. To quiet the restlessness and anxiety Peacock's Bromides in doses of 1 to 2 teaspoons are most effective. Calcium lactate combined with this has a beneficial influence on the tremor.

Hirschsprung's Disease Treated by Lumbar Sympathectomy

The results of the operation of lumbar sympathectomy in the small number of cases in which it has been performed have been uniformly favorable. The patients have shown remarkable improvement in their general health. The abdominal distention has decreased with variable rapidity, and the patients who, previously had suffered from obstipation, report regular bowel movements once or twice a day, usually without the aid of laxatives or enemata. There have been no deaths reported from the operation. No untoward symptoms in reference to other pelvic organs have occurred.—T. Wood Clark, M.D., and Frederic M. Miller, M.D.,—*N. Y. S. Journal of Med.,* Sept. 15, 1931.

Calcium Metabolism and Colds

Scientists have long been familiar with the fact of seasonal variations in human calcium and phosphorus metabolism. These variations occur coincident with the seasonal changes in the sun's spectrum. The average man—so statisticians tell us—during the late fall and winter spends less than ten minutes in three days in the sunshine.

Doctors have noticed further a correlation between calcium metabolism and susceptibility to colds. When the inorganic blood calcium is low, the incidence of colds, grippe and other respiratory disorders tends to be greater. Accordingly, many physicians now regard it as part of medical routine to prescribe when winter approaches, a calcium tonic to compensate their patients for the lack of sunshine. Preference is being shown to calcium in glycerophosphate form because it is so highly assimilable.

Hagee's Original Cordial Compound is a favored calcium tonic of this type. More than four million bottles have been used upon the advice and recommendation of physicians. One reason for its popularity undoubtedly lies in the presence of calcium and sodium glycerophosphates, as well as extract of cod liver oil, with the therapeutic advantage of a pleasant taste. The makers will gladly send a full size sample bottle if you address them—Katharmon Chemical Company, 101 N. Main St., St. Louis, Mo.

Liver Extract No. 343 in Pernicious Anemia

Many therapeutic procedures have been used since Addison's time to influence favorably the clinical course of pernicious anemia. Since 1926, following the demonstrations of Minot and Murphy, clinicians have confirmed the blood regenerative activity of liver and the specificity of the Minot-Murphy liver diet in the treatment of this disease.

Chemical studies followed the findings of research workers in an endeavor to isolate the active material upon which results were dependent. It was these studies that led to the development of a liver fraction containing the active principle in high concentration. This fraction is contained in Liver Extract No. 343. It produces the same rapid reticulocyte rise and the same gratifying therapeutic response in the patient's general condition as does the whole liver.

In addition to the familiar twenty-four vial package, Eli Lilly and Company are now supplying a bulk package containing 100 grams, approximately 30 level teaspoonfuls, of Liver Extract No. 343. The new multiple-dose package is said to be more economical.

Perhaps there is something you need listed in the Classified!

Hypertension Treated Symptomatically

Physicians are agreed that hypertension must be treated symptomatically, regardless of whether they are dealing with an essential or secondary hypertension. The first aim of the physician is to resort to such means as will bridge the gap of threatened serious consequences until underlying causes can be determined and eliminated.

In this emergency Pulvoids No. 373 Natrico, a product of The Drug Product Co., Inc., of Long Island City, N. Y., is being continuously more largely used by the most discriminating and ethical physicians. It is a synergistic combination of potassium nitrate, sodium nitrite, nitroglycerin and crataegus oxyacantha. It s the modified formula of Sir Lauder Brunton with the addition of cardiants. It has for more than fifteen years been ethically presented to the medical profession and the clinical evidence that has followed its use is altogether confirmative of the therapeutic suggestions, made for the combination by its originators.

In preparing Pulvoids Natrico consideration is given to the fact that nitroglycerin lowers blood pressure promptly by dilating the arteroles. Its action, however, is evanescent and the high level soon returns, unless it is reinforced by the synergist.

Sodium nitrite and potassium nitrate also lower blood pressure. Their action is slower but more lasting then that of nitroglycerin. Hence, when these drugs are combined, the advantages of one supplement the deficiencies of the other.

Potassium nitrate is also a diuretic. By siding in the excretion of fluid from the overfilled vascular system, it eliminates one of the important causes of hypertension.

Crataegus oxyacantha renders a very distinct and demonstrable service in atherosclerosis associated with high blood pressure and essential hypertension. It will not, of itself, lower blood pressure but it is an important synergist.

Pulvoids Natrico, manufactured under a special and exclusive process, are so loosely aggregated as to crumble under thumb pressure. They have undeniable superiority in preserving the integrity of the original products in stable form. Mechanically they are superior to gelatine capsules in which nitrites are often dispensed.

Pulvoids Natrico are eneric coated to avoid gastric disturbance which is often caused by drugs of this type, while in the intestines their pulversability insures complete and rapid absorption.

The Drug Product Co., Inc., has prepared a brochure on this important subject. It epitomizes the latest and most scientific results in this wide field of daily practice. It is available to the profession on application.

DOCTORS GUIDE
TO
BUSINESS LITERATURE

This free service is arranged so that busy physicians need write only one letter to obtain the literature and samples of as many manufacturers as desired. Manufacturers will not fill "repeat" orders for samples. The list contains the more important business literature published by manufacturers of pharmaceuticals, physicians supplies, foods, etc. Merely list the key numbers of all publications desired and send your request to
MEDICAL TIMES & LONG ISLAND MEDICAL JOURNAL, 95 *Nassau Street, New York*

ARTIFICIAL EYES

MT-183 Booklet on the fitting care and wear of Artificial Human Eyes. Color chart and order blanks for ordering selections from stock, also price list. Gold and Glassballs for Mules operation. Price list. Mager & Gougelman, Inc.

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(E) The Hogan High Frequency Apparatus.
(F) The McIntosh Electra Diathermy Apparatus.
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(G) Peptonum Siccum,
(H) Sterile Surgical Catgut Ligatures,
(I) Concentrated Liver Extract,
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(K) Spleen Liquid,
(L) Lecithol,
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MT-140 "Viburno," Its action upon the Genito-Urinary System, and "Table for Determining Date of Delivery." The Viburno Company, Inc.

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MT-190 (A) Physician's Pocket List with Formulae of Suppositories of Cacao Butter, Glycerin and Gelatin.
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MT- 63 Illustrated pamphlet of one of New Jersey's Institutions. Idylease Inn.

MT- 65 An illustrated pamphlet of this well-known Goshen, N. Y., Institution. "Interpines."

MT-125 The Ross Sanitarium. Illustrated Pamphlet of this well known Long Island Institution. Dr. William H. Ross.

MT-146 Westport Sanitarium. Descriptive literature, directed by Elbert M. Somers, M. D., Physician-in-Charge. Westport Sanitarium.

SURGICAL INSTRUMENTS AND SUPPLIES

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WATERS

MT- 55 Pluto Water—Nature's method of assisting in Habitual Constipation, disorders of the Kidneys and Gastrointestinal tract. Literature and Samples. French Lick Springs Hotel.

MT- 69 "Alkalinization—Its Indications and Attainment." A 32 page booklet. Kalak Water Company.

MT-116 "Mineral Waters Therapeutically Considered," "Health Hints for the Sedentary Worker" and "Health Hints at Home and Abroad." Hiram Ricker & Sons.

Perhaps there is something you need listed in the Classified!

In the First Stage of Colds

At the beginning of a cold, if you can establish elimination, so as to carry off retained toxins, stimulate circulation and give salicylates for their specific action, you will have won the major part of your battle with one blow. In patients with susceptibility to colds and "grippy" attacks try prescribing Tongaline to be taken as soon as the first symptoms manifest themselves. In most cases this will probably do more to abort the attack or shorten its duration and mitigate the symptoms than other generally employed measures—just because it is combined to make this triple attack. If the case is fully developed when you see it, Tongaline will really relieve the muscular aches, the stuffiness, the pain in head and over eyes. Tongaline can be prescribed as a liquid or in tablet form.

When writing for complimentary samples, specify the form preferred. The Mellier Drug Company, 2112 Locust Street, St. Louis, Mo.

Colloids in Therapeutics

Colloids are not substances foreign to the animal body; enzymes are colloids and the living cytoplasm is mainly composed of negatively charged colloids. There are two distinct types of colloids, suspensoids and emulsoids, suspensoid colloids being the most important therapeutically, colloidal silver, colloidal iron, colloidal kaolin, etc., being familiar to most physicians.

Substances in the form of a colloidal solution or "sol" possess very different physical properties from the same substances in true crystalloid solution. They are almost inert chemically whereas crystalloids are very reactive. The severe pain on injection of solutions of many metallic salts is due to interaction with salts in the blood and precipitation of the tissue colloids. Colloids, when injected, do not react violently with the tissues and fluids at the point of primary distribution. Their active constituent factors are not rapidly used up in a purely local effect but are available for absorption and pharmacological action.

Suspensoid colloids, which are the most important therapeutically, contain the active ingredient in the form of tiny particles which break down very slowly in contact with tissues into molecules and ions and thus exert a prolonged therapeutic action. The fact that these particles are large as compared with the pores of the body vessels greatly hinders their excretion, so that only small quantities are required as compared with the therapeutically sufficient doses when administered in the crystalloid form.

The new booklet recently issued by Crookes Laboratories, Inc., of 145 East 57th Street, deals concisely with the respective merits of colloids and crystalloids in theapeutics and gives brief descriptions of the various Collosol preparations now available in America. A copy will be gladly sent to you upon request.

Original Articles

AYURVEDIC THERAPEUTICS
OR
THE THEORY OF RASA, BIPAKA, VEERYA & PRAVABA
BY
VAIDYABHUSANA PURUSOTTAM SASTRI HIRELEKER,
AMRAOTI
—*The Journal of Ayurveda.*

(This is without doubt an original article!)

Edema

Ammonium chloride will sometimes relieve edema.

The Nature of the Toxic Agent in Eclampsia and the Nephrosis of Pregnancy

F. Hoffman and K. Anselmino have brought forward clinical and experimental evidence to support their contention that the substance in the blood of pregnant women suffering from eclampsia or nephrosis is identical with the hormones secreted by the posterior lobe of the pituitary. Filtrates from the blood of women with either of these two dreaded complications of pregnancy, when injected subcutaneously into rabbits, greatly diminished the amount of urine subsequently secreted. In those cases in which the blood pressure of the patient was considerably raised, injection of the filtrate from the blood produced an appreciable rise also in the blood pressure of animals. Similar injections from cases of uncomplicated pregnancy or from non-pregnant women had no effect on the blood pressure of rabbits. From the results of their experiments Hoffmann and Anselmino submit that the primary factor in the production of eclampsia and the nephrosis of pregnancy is a disturbance of the organs of internal secretion which leads to an uncompensated over-production of both the anti-diuretic and vaso-compressor components of the hormone of the posterior lobe of the pituitary body.—(*Klinische Wochenschrift*, August 1, 1931, 1438.)

New Instruments for Cervical Coagulation

New instruments for cervical coagulation have been designed by Dr. George A. Remington of Chicago primarily for practical convenience and efficient instrumentation in his new technique for electrocoagulation and sparking in chronic follicular cervicitis. These instruments, unlike other monoterminal and biterminal electrodes, have wide application in other vaginal, cervical and uterine conditions where electrocoagulation is indicated.

The set as manufactured by the McIntosh Electrical Corporation of Chicago, is a combination of electrodes and accessories especially intended for coagulation of the uterine cervics by means of the localized biterminal method—Remington technique. Coagulation of the cervical canal from the internal to the external os by the Remington method is readily accomplished along with fulguration sparking of the anterior and posterior lips of the cervics.

Most of the usual endocervical electrodes are so constructed that coagulation is not possible except to a small area in but one plane because of insulation, and fulguration is not practical for the same reason. The ball-point and needle active electrodes in the Remington set properly coagulate in all planes, greater activation occurring in the area where pressure is applied and fulguration sparking is readily accomplished.

Uterine elevation is obtained with the indifferent disc electrode in the field facilitating proper application of technique.

Flexbility of design also provides utility for electrocoagulation and fulguration in treating polyps, venereal warts, small growths, fistulae, diverticula, cysts, etc., and enables the operator to readily cope with variances in anatomical and physical structure of individual patients.

The set consists of: One indifferent disc electrode (which acts as uterine elevator), one indifferent ring electrode, three graduated, ball-point active electrodes, one needle-point active electrode, one double-connection indifferent electrode handle, one insulated special length active electrode handle and connecting cords—provided in a convenient leatherette carrying case with purple velvet lining.

These instruments fulfill the desire of the profession for definitely better instrumentation because of their unique and unusually effective, scientific design.

The set may be used with McIntosh Metro-Coagulator, McIntosh Diathermy Units or any diathermy machine of carefully calibrated power. Complete literature on this reasonably priced set may be had from the McIntosh Electrical Corporation of Chicago.

Hemosan in Cases of Chronic Constipation

The report of a well-known professor of Berlin University states that the action of Hemosan in cases of chronic constipation and atony of the intestinal canal, and in impaired digestion, is superior to any other remedy he has used. Further he says that in his estimation the therapeutic action is due to two factors. First, the dissolving and excretion from the intestinal tract, of uric acid, the removal of putrefaction and its interference with peristaltic action, and secondly, that the released oxygen is able to make the capillary blood arterial by oxygenation and generally stimulate the whole nervous system. Therefore chronic constipation is overcome by the restoration of true physiologic metabolism.

In view of these findings, Hemosan is submitted to the medical profession for further clinical trial and use. Samples and full information regarding the above may be had by addressing Sano Laboratories, Inc., 31 Governor Street, Newark, N. J.

Have you seen the Doctor's Guide to Business Literature?

Viburnums Without That Taste

Those of the medical profession whose practice it is to prescribe or recommend the use of viburnums realize the ever present objection to the nauseous taste of such preparations.

Viburno, the formula of Dr. J. C. Beach, is unique in that its taste is not masked by the use of spices or added flavors, but the drugs are scientifically denauseated without the dissipation of any of their therapeutic value, and without the loss of any of the valerianic acid of the Viburnum Prunifolium used in its compounding.

As active constituents, each two dram dose of Viburno contains:

Viburnum Prunifolium	grains viii
Piscidia Erythrina	grains iii
Port Wine et diluent qs.	drams ii

The Viburnum Prunifolium used is a carefully selected lowland black haw, all spurious, weak and variable "so called" black haw and "mountain haw" being rejected. The Piscidia Erythrina, producing a burning sensation and increased secretion evidencing a tonic action, is an ideal synergist.

The Viburno Co., Inc., of New York City will be glad to send a test supply to interested physicians for comparison of results in the treatment of adolescent girls, weak pregnancy, hallucinations at the menopause, and in all atomic female conditions, pelvic or otherwise.

Doctor's Dying Thought for Patient

While completing an operation in a hospital recently, Dr. T. H. Williams turned suddenly to Dr. R. M. Coston and gasped:

"Doctor! Take care of my patient!"

Then he dropped dead. Dr. Coston completed the operation.—*International News Service.*

(There are two rather inconvenient things which might happen at any operation: the lights might go out or the surgeon drop dead.)

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